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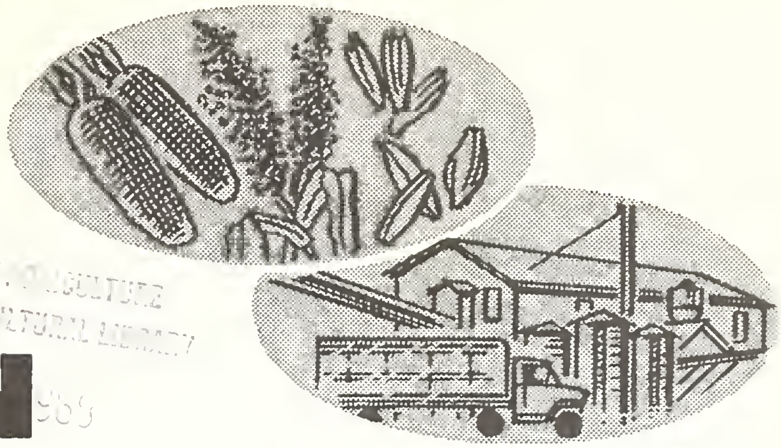

FEED SITUATION

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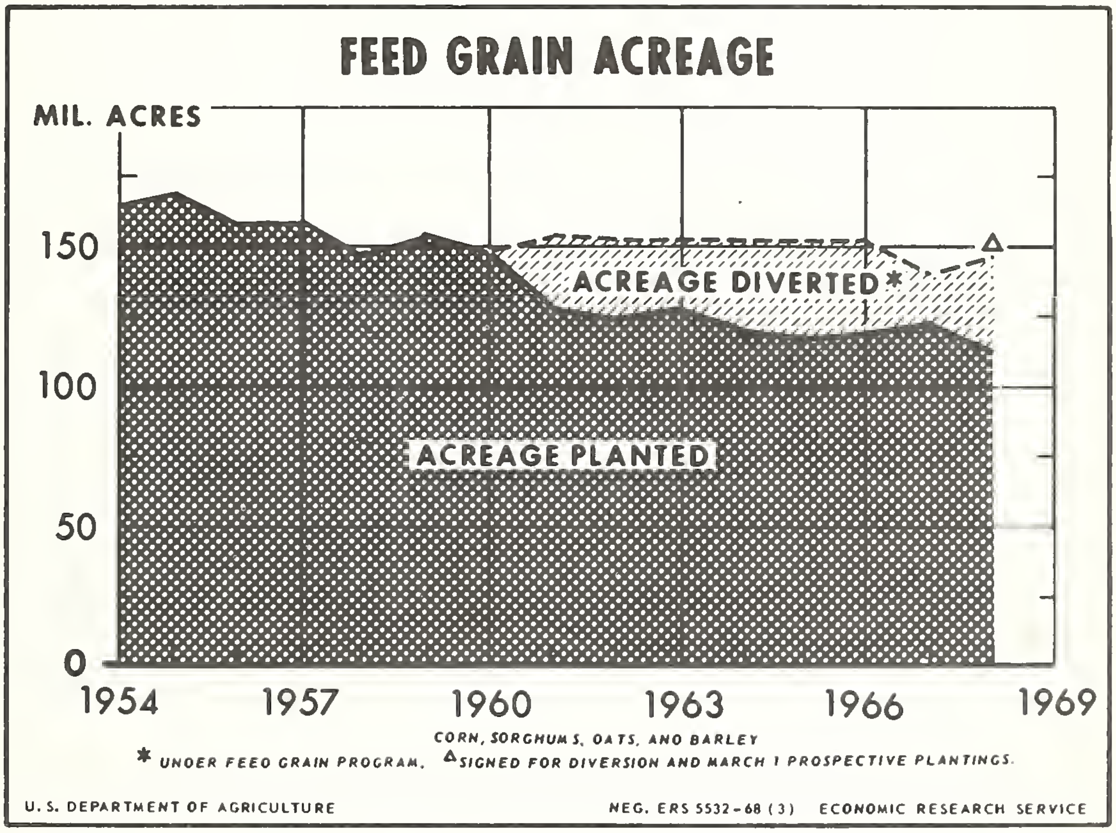
The acreage planted to feed grains in 1968 will be reduced 7 million acres to about 113 million acres, if farmers carry out their March 1 plans. Reductions of 6 million acres for corn and 2 million for sorghums are in prospect , while small increases are indicated for oats and barley. Feed grain acreage has been below the 1959-60 base level of the Feed Grain Program each year since 1961, as farmers have diverted 24 million to 35 million acres annually from feedgrains to soil-conserving uses.



CORN, SORGHUMS, OATS, AND BARLEY

* UNDER FEED GRAIN PROGRAM. △SIGNED FOR DIVERSION AND MARCH 1 PROSPECTIVE PLANTINGS.

U. S. DEPARTMENT OF AGRICULTURE NEG. ERS 5532-68 (3) ECONOMIC RESEARCH SERVICE

IN THIS ISSUE

Prospects for 1968/69

Hay Prices—Predicting Their Change

Published five times a year by
ECONOMIC RESEARCH SERVICE • U. S. DEPARTMENT OF AGRICULTURE

Table 1.--Statistical summary of prices, indexes and prices ratios, recent years and months

Item	Unit	Season average		March	1967/68			
		1965/66	1966/67	1967	Dec.	Jan.	Feb.	Mar.
FEED GRAIN AND HAY PRICES								
Corn, No. 3 Yellow, Chicago	Dol. per bu.	1.27	1.36	1.38	1.11	1.10	1.12	1.14
Price received by farmers	do.	1.16	1.24	1.28	1.03	1.04	1.06	1.06
Oats, No. 1 White, Chicago	do.	.750	.767	.785	.792	.812	.833	.802
No. 2 White, Minneapolis	do.	.664	.725	.734	.701	.727	.736	.740
Price received by farmers	do.	.622	.665	.682	.661	.667	.686	.687
Barley, No. 3, Minneapolis	do.	1.30	1.32	1.32	1.20	1.24	1.25	1.23
Price received by farmers	do.	1.02	1.05	1.02	.975	.978	.984	.971
Sorghum grain, No. 2 Yellow, Kansas City	Dol. per cwt.	1.97	2.09	2.17	1.96	2.06	2.10	2.10
Price received by farmers	do.	1.79	1.84	1.96	1.73	1.75	1.86	1.86
All hay, baled, price received by farmers	Dol. per ton	23.20	25.00	25.10	23.40	24.00	23.80	23.60
Alfalfa hay, baled, price received by farmers	do.	24.00	24.00	26.00	24.00	24.70	24.20	24.00
PROCESSED FEED PRICES, BULK								
Soybean meal, 44 pct., solvent, Decatur	Dol. per ton	81.50	78.80	76.60	73.40	75.10	74.50	75.00
50 pct., solvent, Decatur	do.	89.60	86.30	83.70	79.40	81.30	80.20	80.40
Cottonseed meal, 41 pct., expeller, Memphis	do.	72.40	77.50	75.70	78.10	77.90	77.60	76.20
Linseed meal, 34 pct., solvent, Minneapolis	do.	74.50	74.40	70.40	74.20	77.00	76.60	75.10
Peanut meal, 50 pct., S.E. mills	do.	79.50	82.50	80.30	79.30	79.60	81.70	82.40
Tankage digester, 60 pct., Chicago	do.	111.00	98.10	92.20	86.60	92.50	88.10	88.10
Meat meal, 50 pct., Chicago	do.	105.30	94.00	84.40	81.60	88.70	84.40	85.30
Fish meal, 60 pct., New York, (bagged)	do.	166.70	137.10	134.50	121.00	120.20	119.00	115.70
Gluten feed, 21 pct., Chicago	do.	47.40	50.10	49.20	51.00	53.20	48.50	45.70
Brewers' dried grains, 24 pct., Milwaukee	do.	46.00	50.70	44.10	51.00	50.60	49.70	44.20
Distillers' dried grains, 28 pct., Cincinnati	do.	59.90	64.50	64.10	55.00	57.20	58.00	57.70
Wheat bran, Minneapolis	do.	40.70	44.30	45.70	45.10	44.10	40.90	41.40
Buffalo	do.	45.20	48.40	49.60	48.90	48.00	43.90	44.60
Wheat middlings, Minneapolis	do.	41.90	45.30	46.70	45.90	44.30	40.90	41.40
Buffalo	do.	47.10	50.70	51.10	50.60	49.50	44.60	46.00
Hominy feed, Chicago	do.	44.20	46.00	43.70	40.60	41.00	40.10	40.40
Molasses blackstrap, New York	do.	21.90	30.83	32.06	29.07	29.07	29.07	28.64
Beet pulp (molasses), Los Angeles	do.	52.00	53.20	57.80	47.00	50.10	51.50	50.90
Alfalfa meal, 17 pct., dehydrated, Kansas City	do.	49.70	53.40	59.50	45.70	43.00	39.20	37.20
Tallow, inedible prime, Chicago	Cents per lb.	.073	.055	.052	.045	.045	.046	.046
Urea, 45 pct. N, Houston (bagged)	Dol. per ton	90.00	90.00	90.00	90.00	90.00	90.00	90.00
PRICES PAID BY FARMERS								
Soybean meal, 44 pct.	Dol. per cwt.	5.37	5.46	5.45	5.17	5.20	5.24	5.22
Cottonseed meal, 41 pct.	do.	4.77	5.37	5.42	5.27	5.27	5.28	5.27
Wheat bran	do.	3.35	3.65	3.72	3.58	3.59	3.58	3.56
Wheat middlings	do.	3.42	3.74	3.78	3.69	3.68	3.65	3.63
Broiler grower feed *	Dol. per ton	*	*	95.00	90.00	90.00	90.00	90.00
Laying feed *	do.	*	*	88.00	84.00	82.00	82.00	81.00
Dairy feed, 16 pct. *	do.	*	*	76.00	74.00	75.00	74.00	73.00
Beef cattle feed, 30 pct. and over	Dol. per cwt.	4.71	4.94	5.00	4.76	4.81	4.80	4.78
Hog feed, over 29 pct.	do.	6.31	6.42	6.40	6.16	6.20	6.25	6.20
Alfalfa hay, baled	Dol. per ton	32.40	34.50	36.00	34.30	34.50	34.20	34.10
PRICE INDEXES (1957-59=100)								
Feed grains, prices received by farmers	Pct.	109	112	115	97	99	101	101
Eleven high-protein feeds, at principal markets	do.	137	135	132	126	129	127	126
Five oilseed meals	do.	142	141	138	132	134	133	132
Tankage, Meat meal, and fish meal	do.	123	108	103	96	99	95	95
Gluten feed, brewers' dried grains, and distillers' dried grains	do.	122	126	122	121	126	121	115
Feed, prices paid by farmers	do.	106	111	112	103	104	104	103
LIVESTOCK AND POULTRY-FEED PRICE RATIOS 1/	Average (March)							
Hog-corn, Chicago 2/	1957-66=14.5	19.6	15.5	13.5	16.0	17.1	17.7	16.9
Hog-corn, U.S.	1957-66=15.6	20.2	15.9	14.0	16.1	16.9	17.8	17.5
Beef steer-corn, Chicago 3/	1957-66=21.3	20.6	19.2	17.8	23.7	24.4	24.2	24.2
Milk-feed, U.S.	1957-66= 1.39	1.50	1.55	1.51	1.71	1.69	1.66	1.63
Egg-feed, U.S. *	*	*	*	7.9	7.6	7.7	7.3	7.5
Broiler-feed, U.S. *	*	*	*	3.0	2.6	3.0	3.2	3.2
Turkey-feed, U.S. *	*	*	*	4.5	4.2	4.3	4.0	4.1

1/ Units of corn or other concentrate ration equal in value to 100 pounds of hog or beef steer, one pound of chicken, milk, or one dozen eggs. 2/ Based on packer and shipper purchases of hogs and No. 3 Yellow corn. 3/ Based on price of beef steers all grades sold out of first hands for slaughter, and No. 3 Yellow corn. * Revised series. Comparable data not yet available for 5-year average or season average.

Prices compiled from Chicago Board of Trade, Minneapolis Daily Market Record, Kansas City Grain Market Review, National Provisioner, Feedstuffs, and reports of the Consumer and Marketing Service.

THE FEED SITUATION

Approved by the Outlook and Situation Board, April 3, 1968

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SUMMARY*

The combined acreage planted to feed grains in 1968 will be reduced to about 113 million acres if farmers carry out their March 1 plans. This would be 7 million acres less than in 1967 and 3 million less than the post-war low in 1965. A 6 million acre reduction is in prospect for corn--down to about 65 million acres. The 17 million acres of sorghums would be 2.2 million less than last year, while small increases are in prospect for oats and barley.

The prospective feed grain acreage reduction from last year is due largely to a change in the 1968 program, designed to encourage farmers to divert more acres from feed grains. Farmers may again divert from 20 to 50 percent of their base acreages of corn and grain sorghums for payment this year as was the case 2 years ago. In 1967, voluntary diversion for payment was eliminated, except for small farms. A record number of farmers have signed up to divert a little over 34 million acres from these 2 grains to conservation uses this year. This would be about 60 percent above the acreage signed for diversion last year and also a little above the heavy signup for the 2 crops in 1965 and 1966.

Barley is excluded from the acreage diversion provisions of the program again this year. The prospective barley acreage, while slightly above last year, continues below the 5-year average, as farmers apparently are again planting wheat and other crops on much of the acreage previously diverted from barley. Oats have never been included in the acreage diversion provisions of the program.

With a normal growing season this year, allowing for the upward trend in yield per acre, the prospective acreage would produce around 166 million tons of feed grains. This would be about 5 percent less than the 175 million tons produced in 1967. A crop of this size, plus the prospective carryover of 42 million tons, would give a total supply of 208 million tons.

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*The summary of this report was released to the press on April 3, 1968.

This would be about 4 million less than in 1967/68 and 7 million below the 1961-65 average. A crop of 166 million tons would be a little below the tentative projection of requirements for 1968/69, indicating the possibility of a moderate reduction in carryover at the close of the marketing year.

The index of prices received by farmers for feed grains has increased more than seasonally since last fall, rising 9 percent from November to March. In the first half of 1967/68, however, feed grain prices averaged about 14 percent lower than a year earlier. High-protein feed prices have been relatively stable during October-March. The index of wholesale prices for these feeds averaged about 9 percent lower in that period than a year earlier.

The U.S. average price of corn rose from 97 cents per bushel last November to $1.06 in February and March--slightly above the loan rate. Corn has been generally cheap this year in relation to prices of most other feeds as a result of the big 1967 crop and above average moisture content. Some further seasonal rise in the price of corn is expected during the next few months, although prospects for the 1968 crop will become a dominate influence on prices later this spring and summer.

Livestock-feed price ratios continue more favorable than last year for hog producers, dairymen, and cattle feeders--encouraging liberal feeding of these types of livestock. While feed price ratios have been generally below average for poultry producers this fall and winter, the broiler-feed price ratio has improved in recent months and was near the 5-year average in February and March.

Feed grain exports were about 10 percent larger in October-February this year than last, with all of the increase in corn. Corn exports totaled 285 million bushels, 32 percent more than a year earlier but a little below the record movement in that period of 1965/66. The 89 million bushels of sorghum grain exported, however, was about 24 percent smaller than a year earlier. Oats and barley exports also have been smaller than in 1966/67.

The quantity of feed grains placed under price support from the 1967 crops has been much larger than in any of the past 3 years, totaling a little over 14 million tons through February. This was almost double the quantity placed under loan during the same period of 1966/67. The rise in feed grain prices since last fall, however, brought all feed grain prices above the loan level in February and March, and the volume going under loan has been at a much slower rate since mid-January. With commercial markets well supplied from the big 1967 crop, sales from CCC stocks have been practically negligible in the first half of 1967/68.

PROSPECTS FOR 1968/69

Smaller Feed Grain Acreage in Prospect

Farmers will reduce their 1968 feed grain acreage to about 113 million acres, 7 million less than last year, if they carry out their March 1 planting intentions. This would be a little below the previous post-war low of 116 million in 1965 and the smallest acreage in more than 70 years. All of the prospective reduction from 1967 is in corn and sorghums, with slightly larger acreages in prospect for oats and barley. The smaller feed grain acreage is due principally to the change in the 1968 Feed Grain Program restoring payment for voluntary acreage diversion. Farmers have signed up to divert a little over 34 million acres from corn and sorghums this year, about 60 percent more than in 1967.

The prospective corn acreage for 1968 is 64.9 million acres, about 6 million less than in 1967 and 1.2 million below the 1961-65 average. Smaller acreages are in prospect for most of the Corn Belt States with the greatest reduction in prospect for Minnesota, Iowa, South Dakota, Nebraska, and Ohio where prospective acreages for 1968 ranged from 10 to 14 percent lower than in 1967. For the entire North Central Region, the prospective acreage is

Table 2.--Feed grains: Acreage, yield and production, United States, average 1961-65, annual 1963-68

Year	Corn 1/			Oats			Barley		
	Planted acreage	Yield per planted acre	Production	Planted acreage	Yield per planted acre	Production	Planted acreage	Yield per planted acre	Production
	Mil. acres	Bu.	Mil. bu.	Mil. acres	Bu.	Mil. bu.	Mil. acres	Bu.	Mil. bu.
Average 1961-65	66.1	2/56.8	3,758	27.9	2/34.4	953	13.0	2/31.2	398
1963	68.8	58.4	4,019	28.1	34.4	966	13.4	29.2	393
1964	65.8	52.9	3,484	25.6	33.2	852	11.7	33.1	386
1965	65.1	62.7	4,084	24.0	38.6	927	10.1	38.8	392
1966	66.3	62.1	4,117	23.3	34.4	801	11.1	35.4	393
1967 3/	70.9	66.6	4,722	20.6	38.0	782	10.0	37.0	370
1968 4/	64.9	67.8	4,400	21.2	38.0	806	10.3	37.9	390

Year	Sorghums 1/				Total 4 feed grains		
	Acreage		Yield per harvested acre	Production	Planted acreage	Yield per planted acre	Production
	Planted	Harvested for grain					
	Mil. acres	Mil. acres	Bu.	Mil. bu.	Mil. acres	Tons	Mil. tons
Average 1961-65	16.2	12.1	2/45.0	548	123.2	1.18	145.4
1963	17.5	13.3	43.9	585	127.8	1.20	153.8
1964	16.8	11.7	41.7	490	119.9	1.12	134.2
1965	17.1	13.0	51.6	673	116.3	1.35	157.4
1966	16.4	12.8	55.8	715	117.1	1.35	157.6
1967 3/	19.3	15.1	50.7	766	120.8	1.45	175.1
1968 4/	17.0	5/13.4	54.4	728	113.4	1.46	165.8

1/ Acreage planted for all purposes; production for grain only. 2/ Simple average. 3/ Preliminary. 4/ Indicated 1968 acreage based on March 1 intentions of farmers. Production computed on the basis of the prospective plantings, assuming average yield per acre adjusted for trend. 5/ Unofficial estimate, based on prospective plantings.

Table 3.--Feed grains: Acreage planted and diverted under current Feed Grain Program, 1961-68

Year	Corn		Sorghum		Barley		Oats 1/	Total 4 feed grains	
	Planted	Diverted 2/	Planted	Diverted 2/	Planted	Diverted 2/	Planted	Planted	Diverted 2/
	Mil. acres	Mil. acres	Mil. acres	Mil. acres	Mil. acres	Mil. acres	Mil. acres	Mil. acres	Mil. acres
1961	65.9	19.1	14.3	6.1	15.7	1/	32.3	128.2	25.2
1962	65.0	20.3	15.1	5.5	14.4	2.4	29.5	124.0	28.2
1963	68.8	17.2	17.5	4.6	13.4	2.7	28.1	127.8	24.5
1964	65.8	22.2	16.8	6.5	11.7	3.7	25.6	119.9	32.4
1965	65.1	24.0	17.1	7.0	10.1	3.7	24.0	116.3	34.7
1966	66.3	23.7	16.4	7.3	11.1	3.7	23.3	117.1	34.7
1967 3/	70.9	16.2	19.3	4.1	10.0	1/	20.6	120.8	20.3
1968 4/	64.9	5/	17.0	5/	10.3	1/	21.2	113.4	6/34.3

1/ No provisions for diversion. Comparatively small acreage was diverted from oat-rye base in 1965 and 1966. 2/ Does not include acreage in the Soil Bank Program. 3/ Preliminary. 4/ Acreage planted based on March 1 prospective plantings. 5/ Not yet available. 6/ Signed for diversion.

Table 4.--Corn: Planted acreage, by States and regions, United States, average 1959-60 and 1961-65, annual 1965-68

Region and State	Average 1959-60	Average 1961-65	1965	1966	1967 1/	1968 Prospective plantings 2/	1968 As a percentage of: Average 1959-60	1968 As a percentage of: Average 1961-65
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	Pct.	Pct.
North Atlantic	2,152	2,095	2,195	2,199	2,277	2,287	106	109
East North Central								
Ohio	3,643	3,111	3,308	3,338	3,539	3,185	87	102
Indiana	5,304	4,506	4,867	5,256	5,519	5,022	95	111
Illinois	10,242	9,191	10,079	10,684	11,218	10,545	103	115
Michigan	2,056	1,881	1,945	1,815	1,833	1,705	83	91
Wisconsin	2,899	2,592	2,638	2,638	2,770	2,715	94	105
Total	24,144	21,281	22,837	23,731	24,879	23,172	96	109
West North Central								
Minnesota	6,933	5,764	5,626	5,313	6,069	5,219	75	91
Iowa	12,608	10,479	10,467	10,676	11,957	10,522	83	100
Missouri	4,315	3,163	3,237	3,108	3,294	3,096	72	98
North Dakota	1,348	1,024	904	759	698	565	42	55
South Dakota	4,326	3,549	3,433	3,399	3,671	3,230	75	91
Nebraska	6,886	4,876	3,873	4,415	4,989	4,490	65	92
Kansas	1,996	1,479	1,289	1,366	1,366	1,380	69	93
Total	38,412	30,334	28,829	29,036	32,044	28,502	74	94
South Atlantic	7,325	5,751	5,504	5,593	5,877	5,569	76	97
South Central	8,792	5,656	4,701	4,592	4,549	4,192	48	74
Western	1,259	1,013	1,053	1,155	1,279	1,192	95	118
Total United States	82,084	66,130	65,119	66,306	70,905	64,914	79	98

1/ Preliminary. 2/ Prospective acreage based on March 1 intentions of farmers.

Table 5.--Grain sorghum: Planted acreage, specified States, United States, average 1959-60 and 1961-65, annual 1965-68

State	Average 1959-60	Average 1961-65	1965	1966	1967 1/	1968 Prospective plantings 2/	1968 As a percentage of: Average 1959-60	1968 As a percentage of: Average 1961-65
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	Pct.	Pct.
Missouri	612	312	338	321	369	321	52	103
South Dakota	316	397	638	523	549	505	160	127
Nebraska	1,829	2,085	2,692	2,423	2,714	2,036	111	98
Kansas	5,336	4,222	4,048	3,805	4,338	3,991	75	95
Oklahoma	1,300	1,052	987	938	1,097	1,020	78	97
Texas	7,963	6,160	6,125	6,370	7,771	6,994	88	114
Colorado	742	694	883	503	699	573	77	83
New Mexico	325	288	294	326	424	360	111	125
Arizona	162	152	187	208	254	224	138	147
California	276	277	343	410	451	428	155	154
Total	18,861	15,639	16,535	15,827	18,666	16,452	87	105
Other States	692	505	544	545	563	553	80	110
Total United States	19,553	16,144	17,079	16,372	19,229	17,005	87	105

1/ Preliminary. 2/ Prospective acreage based on March 1 intentions of farmers.

52 million acres--9 percent below the acreage planted in 1967. Moderate acreage reductions also are in prospect for most of the Southern States, while slightly larger acreage is in prospect for the Northeast. If farmers carry out their March 1 intentions and yields continue their upward trend, a normal growing season this year would give a crop of around 4.4 billion bushels, about 300 million less than the record crop of 1967.

The total acreage planted to sorghums in 1968 will be about 17.0 million acres, based on farmer's March 1 planting intentions. This would be 2.2 million less than in 1967, but slightly above the 1961-65 average. Smaller acreages are in prospect for all of the important producing States reflecting increased diversion under the 1968 Program. The greatest reduction was in prospect for Nebraska, where farmers indicate a 25 percent cut from the large acreage planted in 1967. Texas farmers indicated plans to reduce their 1968 acreage about 10 percent, while a reduction of 8 percent is in prospect for Kansas and 7 percent in Oklahoma. The prospective acreage, with a normal growing season this year, would give a U.S. crop of about 728 million bushels--5 percent less than in 1967.

Farmers plan a 3 percent increase in their 1968 oat acreage, following a long-term downward trend. The 21.2 million acres in prospect would be 24 percent below the 1961-65 average. With a normal growing season this year, a crop of 806 million bushels would be produced, about 3 percent larger than in 1967.

The prospective 1968 barley acreage, including the fall seeded acreage, is about 10.3 million acres. This would be about 3 percent above the small acreage seeded in 1967--but 21 percent below the 1961-65 average. The greatest increases from 1967 are in prospect for the Great Plains States where farmers apparently are returning to barley, following the sharp increase in wheat acreage in 1967 when farmers were encouraged to increase wheat production.

The acreage diversion program does not apply to barley again in 1968, but the prospective barley acreage is again below the level for most of the years 1962-66 when barley was included in the diversion provisions of the program. Much of the acreage diverted from barley in those years apparently will again be seeded to wheat and other crops as was the case in 1967. With a normal growing season this year, the prospective acreage would be expected to give a crop of about 390 million bushels, 5 percent larger than in 1967.

Farmers Sign Up to Divert a Larger Acreage from Feed Grains

Based on a preliminary report of the signup for the 1968 Feed Grain Program, farmers will divert a little over 34 million acres from corn and sorghums to soil-conserving uses this year. This would be about 60 percent above the 21.5 million acres signed for diversion 1967 and a little larger than the corn and sorghum acreage signed for diversion in 1965 and 1966. The increase in diversion this year over 1967 resulted from a change in the program reinstating the provision permitting voluntary diversion of 20 to 50 percent of the base acreage for payment. In 1967, voluntary diversion for payment above the 20 percent level was eliminated, expect for small farms with a base acreage of 25 acres or less and farms with a base of 125 acres or less whose owners requested a temporary reduction to 25 acres.

The report of the signup, which ended March 15, gave the total number of farms signed up as about 1.5 million, nearly 9 percent more than in 1967. These farms had a total corn and grain sorghum base of 76.6 million acres or 67 percent of the total U.S. base acreage. This was about 6.5 million above the base on enrolled farms in 1967. The 1968 acreage signed for diversion represents about 45 percent of the total base on participating farms, compared with about 31 percent last year and 44 percent in 1966.

Table 6.--Feed grains: Supply and utilization, United States, average 1961-65, annual 1964-68

Item	Marketing year beginning 1/					
	Average 1961-65	1964	1965	1966	1967 2/	1968 3/
	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons	Mil. tons
Supply						
Carryover						
Government stocks 4/	58.7	56.6	43.7	24.4	18.3	---
"Free" 5/	10.4	12.7	11.1	17.7	18.8	---
Total	69.1	69.3	54.8	42.1	37.1	42.0
Production	145.4	134.2	157.4	157.6	175.1	165.8
Imports 6/	.4	.4	.3	.3	.3	.3
Total supply	214.9	203.9	212.5	200.0	212.5	208.1
Utilization						
Livestock feed	119.3	113.0	126.3	125.8	131.2	
Food, industry and seed	14.3	14.5	15.0	15.1	15.1	
Exports 6/	20.7	21.6	29.1	22.0	24.2	
Total	154.3	149.1	170.4	162.9	170.5	
Carryover at end of year	60.6	54.8	42.1	37.1	42.0	

1/ Corn and sorghum grain October-September marketing year; oats and barley July-June. 2/ Preliminary. 3/ Based on March 1 prospective plantings and average yields with allowance for trend. 4/ Under loan or owned by CCC. 5/ Residual; privately held stocks. 6/ Includes grain equivalent of products.

Feed Grain Supply Prospects for 1968/69

Feed grain production on the prospective 1968 acreage would total around 166 million tons with a normal growing season this year. This production estimate includes an allowance for a continuation of the upward trend in yields. A crop of this size would be about 5 percent below last year's record crop, but 14 percent above the 1961-65 average. Much of the reduction from last year would be in corn, although a moderate reduction also is in prospect for sorghum grain.

With production at this level, the total supply of feed grains would be around 208 million tons. This would be about 4 million tons less than in 1967/68 and 7 million below the 1961-65 average. While a smaller crop is in prospect, the carryover of feed grains into 1968/69 is expected to increase to around 42 million tons--about 5 million more than a year earlier. Assuming a continuation of the generally good demand of recent years, total feed grain disappearance in 1968/69 would be expected to be maintained at around the 170 million tons currently estimated for 1967/68. Estimated consumption for 1967/68 includes about 146 million tons for domestic use and a little over 24 million for export.

Assuming total disappearance in 1968/69 is near the 1967/68 level, the projected 1968 crop would be somewhat below our total requirements resulting in a moderate reduction in carryover at the close of the 1968/69 marketing year. The actual balance between production and requirements, however, will depend to a considerable extent on the 1968 growing season. An unfavorable growing season this year would result in a greater deficiency in the 1968 crop and a larger reduction in carryover while an unusually good growing season could give a crop near or a little above our total requirements.

Prospects for Grain-Consuming Livestock

The number of grain-consuming animal units to be fed during October-September 1968/69 may not differ much from the 179 million currently estimated for the 1967/68 feeding year. This would be the third consecutive year in which livestock numbers have held close to the post-war high of 180 million reached in 1966/67. With a continuation of the feeding rate near the average of recent years, feed requirements in 1968/69 would be close to the record level estimated for 1967/68.

Hog feeding for the current feeding year--in terms of grain-consuming units--are expected to be close to the 1966/67 level and a little above the 1961-65 average. While feed requirements for hogs were above a year earlier last fall, they probably will be slightly below last year this spring and summer. Animal units of poultry in 1967/68 may be off slightly from last year, due principally to a prospective reduction in turkey production this year.

The total number of cattle fed for market in 1967/68 is expected to be slightly more than in 1966/67. Dairy cattle numbers continued to decline but at a slower rate than in other recent years. However, feed consumption by dairy cows has gone up through increased feeding rates. For example, on February 1 dairy reporters reported an average of 10.9 pounds of grain and other concentrates fed daily to milk cows--3 percent above a year ago and 17 percent above the 1962-66 average.

Hay Acreage and Production Prospects

The total acreage cut for hay in 1968 would be about 3 percent less than last year, if growers' March 1 intentions are realized. This would continue the general decline in hay acreage of recent years. The 63.0 million acres in prospect is 6 percent below the 1961-65 average and about a sixth less than in the early 1950's. The largest regional decline from last year, 4 percent, is in prospect for the West North Central States which produces about a third of the U.S. hay crop. Producers in other regions reported intentions to reduce hay land by 1 or 2 percent from last year. The heavier current supplies on hand from the 1967 crop in most areas probably influenced farmers' plans for 1968. Should growers carry out their March 1 plans and yields are average--with an allowance for trend--the 1968 hay crop would be about 122 million tons, some 4 million tons less than last year's record high crop.

The number of hay-consuming livestock in 1968/69 may not differ much from the estimate of 102.6 million units for the current season. A small decrease in dairy animals appears probable, but beef cattle numbers may be a little higher than in the current season.

RECENT DEVELOPMENTS

Feed Grain Prices Rise Seasonally

Feed grain prices have been increasing seasonally since the low point reached in November, with average prices received by farmers rising about 9 percent from November to March. For October-March, however, prices have averaged about 14 percent below a year earlier when they were at the highest level in 12 years. Some further seasonal rise appears probable, but prices this spring and summer will be influenced to quite an extent by prospects for the 1968 crops.

Corn prices have made a little more than the normal seasonal increase so far this year, although they continue lower than average in relation to most other feeds. The U.S. average price rose

Table 7.--Feed grains: Prices at specified markets, by weeks, January-March 1967 and 1968 1/

Week ended	Corn, Yellow, Chicago						Oats, No. 2 Minneapolis		Barley, No. 3 Minneapolis		Milo, No. 2 Kansas City	
	1967			1968								
	No. 2	No. 3	No. 5	No. 2	No. 3	No. 5	1967	1968	1967	1968	1967	1968
	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per bu.	Dol. per cwt.	Dol. per cwt.
January 5	1.44	1.41	1.31	1.13	1.10	.99	.73	.72	1.35	1.23	2.12	1.96
12	1.44	1.40	1.31	1.14	1.10	.99	.75	.72	1.35	1.24	2.12	2.01
19	1.40	1.38	1.29	1.14	1.09	.98	.73	.73	1.33	1.24	2.10	2.06
26	1.44	1.40	1.28	1.13	1.10	.97	.74	.73	1.32	1.22	2.10	2.09
February 2	1.41	1.39	1.30	1.13	1.10	.99	.73	.74	1.31	1.24	2.12	2.12
9	1.42	1.38	1.29	1.16	1.15	1.03	.70	.74	1.30	1.24	2.10	2.13
16	1.39	1.36	1.28	1.16	1.15	1.03	.69	.73	1.31	1.24	2.08	2.12
23	1.42	1.39	1.31	1.14	1.11	.99	.73	.73	1.32	1.25	2.16	2.07
March 1	1.42	1.39	1.29	1.13	1.10	.99	.72	.74	1.35	1.25	2.14	2.06
8	1.41	1.38	1.30	1.14	1.11	1.00	.73	.74	1.32	1.23	2.15	2.08
15	1.40	1.37	1.28	1.15	1.13	1.00	.73	.74	1.31	1.23	2.17	2.10
22	1.41	1.38	---	1.20	1.16	1.04	.75	.74	1.32	1.22	2.18	2.11
29	1.41	1.40	1.34	1.19	1.16	1.07	.73	.74	1.30	1.22	2.17	2.11

1/ Weekly average prices weighted by carlot sales.

Table 8.--Prices of specified byproduct feeds, per ton, by weeks, January-March, 1967 and 1968 1/

Period	Soybean meal, 44 percent protein, Decatur		Cottonseed meal, 41 percent protein, Memphis		Meat meal, 50 percent protein Chicago		Fish meal, 60 percent protein New York		Gluten feed, 21 percent protein, Chicago		Wheat middlings, Minneapolis	
	1967	1968	1967	1968	1967	1968	1967	1968	1967	1968	1967	1968
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
January 2	85.25	73.50	83.00	77.00	103.75	86.25	153.00	121.00	60.00	52.00	57.00	46.50
9	81.00	73.50	82.00	78.50	101.25	86.25	147.00	121.00	60.00	54.00	55.50	46.00
16	80.50	76.00	82.00	78.50	98.75	91.25	147.00	121.00	60.00	54.00	53.50	43.00
23	80.00	76.00	81.00	78.50	93.75	91.25	147.00	119.00	58.00	53.00	49.00	43.00
30	82.00	76.50	80.00	77.00	91.25	88.75	147.00	119.00	57.00	53.00	47.00	43.00
February 6	81.50	75.50	79.00	78.50	90.00	85.00	140.00	119.00	55.00	51.00	44.50	40.50
13	79.50	75.00	76.00	77.50	90.00	85.00	140.00	119.00	53.00	49.00	40.00	41.50
20	79.00	74.00	75.00	78.00	87.50	83.75	140.00	119.00	52.00	48.00	41.50	41.00
27	78.00	73.50	75.00	76.50	87.50	83.75	140.00	119.00	50.00	46.00	42.50	40.50
March 5	78.00	74.50	75.00	76.00	87.50	83.75	135.00	116.00	50.00	46.00	47.00	42.00
12	76.50	75.00	76.00	76.00	85.00	85.00	135.00	116.00	50.00	46.00	44.00	41.50
19	76.50	75.25	76.00	76.50	83.75	86.25	134.00	116.00	49.00	46.00	49.00	41.50
26	75.50	75.25	76.00	76.50	81.25	86.25	134.00	115.00	48.00	45.00	47.00	40.50

1/ Wholesale prices, bulk, except fish meal which are bagged basis. Prices are for Tuesday of each week.

from 97 cents per bushel in November to $1.06 in March. For the first half of the marketing year, however, prices averaged $1.03 per bushel--25 cents below a year earlier. Lower prices this year are largely the result of the big 1967 crop and high moisture content corn, especially in the Eastern Corn Belt. Corn prices were generally below the loan rate in most areas of the Corn Belt last fall. Increases since that time, however, brought February and March prices to slightly above the loan rate.

The large quantity of corn going under loan, together with prospects for increased domestic use and exports this year, are expected to result in further increases in corn prices this spring and summer. During the late spring and summer, prospects for the 1968 crop will have an important bearing on prices. Assuming a normal growing season this year, it does not appear likely that corn prices will rise more than 5 to 10 percent above the loan rate this spring and summer. The large quantity of "free" corn, together with the 1967 corn under loan which could be redeemed if prices rise materially, will tend to limit the extent to which corn prices will rise.

The U.S. average price of sorghum grain rose about 11 percent from November to March, somewhat more than the normal seasonal rise. During the first half of the marketing year, sorghum grain prices have averaged 6 percent below a year earlier--much less than the marked reduction in corn prices. In March the average price received by farmers for sorghum grain per 100 pounds was 98 percent of the average price of corn. During the first 6 months of the marketing year, it averaged 96 percent of the corn price, compared with 82 percent in the first half of 1966/67.

The farm price of oats also has strengthened since the seasonal low of last summer. Oat prices advanced 10 percent from August to March when they were slightly higher than a year earlier. The U.S. average price of oats per 100 pounds in March was 14 percent above corn compared with the long-term average of about 8 percent below corn. Barley prices have been comparatively stable since last fall. During January-March, prices received by farmers averaged 98 cents per bushel, 5 cents under a year earlier. In March, the average price of barley per 100 pounds was 7 percent above corn--much above the long-term average in relation to corn. Corn prices also continue low this spring in relation to many of the byproduct feeds.

Quality of the 1967 Corn Crop Below Average

Market receipts of corn by grades for the 2 months (November-December) during and following harvest indicate the 1967 crop was lower in quality than in other recent years. Receipts by grades are based on inspections of corn received in 17 Midwestern, Eastern and Southern States. Corn inspections were not compiled separately this year for carlot and trucklot receipts as in 1965 and 1966 (table 10). It is estimated, however, that about 75 percent of the receipts inspected were in carlots and about 25 percent trucklots.

The indicated quality of the 1967 crop was moderately below that of the 1965 and 1966 crops and well below the good quality of the 1963 and 1964 crops. Only about 17 percent of the corn graded No. 2 or better, compared with about 19 percent from the 1965 and 1966 crops, 28 percent from the 1964 crop, and 32 percent from the 1963 crop. On the other hand, 30.7 percent graded No. 5 or Sample, compared with 27 percent in 1966 and less than 20 percent in 1964 and 1965. The inspections for individual States indicate that the corn was especially low in quality in Ohio, Indiana, Wisconsin, Virginia and Kentucky. The corn inspected in Illinois, Iowa and Minnesota was near the average for all of the 17 States inspected and was above average in Missouri and Nebraska.

Livestock-Feed Price Ratios Generally Favorable

Livestock-feed price ratios have been generally more favorable to livestock producers during the first half of the 1967/68 feeding year than a year earlier primarily as a result of the lower feed

Table 9.--Market receipts of corn, oats and barley, marketing years 1966/67 and 1967/68

Year beginning	Corn 1/		Year beginning	Oats 1/		Barley 2/	
	1966/67	1967/68		1966/67	1967/68	1966/67	1967/68
	1,000 bu.	1,000 bu.		1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.
October	27,306	17,728	July	13,656	8,637	12,099	7,956
November	76,669	52,183	August	27,611	25,866	36,023	22,681
December	29,603	44,308	September	13,700	8,772	15,356	9,653
January	29,643	36,203	October	4,802	5,281	13,365	8,154
February	34,219	26,354	November	3,452	5,047	13,881	8,046
March	44,338		December	5,837	3,270	10,362	5,547
April	23,104		January	7,798	3,786	10,824	7,218
May	13,393		February	3,632	4,122	8,948	7,720
June	14,316		March	3,657		14,743	
July	17,201		April	3,037		11,933	
August	28,105		May	2,642		9,613	
September	19,319		June	5,519		10,664	
Total	357,216		Total	95,343		167,811	

1/ Chicago, Milwaukee, Minneapolis, Duluth, St. Louis, Kansas City, Peoria, Omaha, Indianapolis, Sioux City, St. Joseph, Wichita and Toledo.

2/ Minneapolis, Milwaukee, Chicago and Duluth.

Table 10.--Corn: Inspected receipts by grades at principal markets, following harvest of 1965-67 crops 1/

Grade	1965				1966				1967	
	Carlots 2/	Truck-lots 2/	Total	Percentage of total	Carlots 2/	Truck-lots 2/	Total	Percentage of total	Total receipts 3/	Percentage of total
	1,000 bushels	1,000 bushels	1,000 bushels	Pct.	1,000 bushels	1,000 bushels	1,000 bushels	Pct.	1,000 bushels	Pct.
1	898	194	1,092	1.1	1,767	170	1,937	1.7	2,055	1.6
2	16,216	2,274	18,490	18.1	17,234	2,576	19,810	17.5	19,160	15.3
3	28,202	4,963	33,165	32.4	30,736	4,180	34,916	30.7	37,758	30.2
4	22,578	9,072	31,650	31.0	21,218	4,653	25,871	22.8	27,616	22.2
5	7,996	3,715	11,711	11.5	12,745	8,293	21,038	18.6	25,207	20.2
Sample	4,150	1,852	6,002	5.9	6,886	2,928	9,814	8.7	13,069	10.5
Total	80,040	22,070	102,110	100.0	90,586	22,800	113,386	100.0	124,865	100.0

1/ 2 Months during and following harvest.

2/ Carlot and trucklot inspections statistically sampled so as to be representative of the quality of corn moving from the farm into commercial channels.

3/ Carlot and trucklot receipts not reported separately.

Source: Grain Division, Consumer and Marketing Service, USDA.

prices. During October-March feed grain prices averaged 14 percent lower than a year earlier; high-protein feed prices were 9 percent lower, while prices of livestock and livestock products averaged about 2 percent lower.

With lower corn prices this year, the hog-corn price ratio averaged 17.2 during October-March compared with 15.0 for the same period of 1967/68. While the ratio has also been above average, it has not been such as to stimulate further increases in hog production. The beef steer-corn price ratio has been much more favorable to cattle feeders this year than last. The average price of fed cattle at Chicago per hundred pounds was equivalent to 24.1 bushels of corn for the period October-March, compared with 18.1 in the same period of 1966/67 and the 1957-66 average of 21.1 bushels.

Prices received by dairy farmers for milk also have been well above average in relation to the cost of dairy feed so far this year. During October-March the milk-feed price ratio averaged 1.69 compared with 1.59 in that period of 1966/67 and the 1956-65 average of 1.48 for the period. This apparently has been offset by increases in costs of other input items, although it has been an important factor in the increase in the feeding rate per cow. Feed price ratios have continued generally below average for poultry producers as a result of a further decline in prices of poultry and eggs in the first half of 1967/68. Because of recent revisions in prices reported for poultry feeds, the ratios for January-March 1968 are not strictly comparable with those of earlier periods. The revised ratios would indicate that the current price ratios are much below average for egg and turkey producers. The egg-feed and turkey-feed price ratios in March also were lower than a year ago. The broiler-feed price ratio, on the other hand, has increased from the unusually low level reached last fall, and in March was near the 5-year average and above a year ago.

High-Protein Feed Consumption Above Last Year's Level

The quantity of high-protein feeds (soybean meal equivalent) consumed by livestock and poultry during October-February totaled about 7.8 million tons. This was about 3 percent more than in that period of 1966/67. This increase was at least partly in response to lower prices--down 9 percent from a year earlier. The increase in protein feeding, however, may have been limited to some extent by the large quantities of high-moisture corn in many areas of the Corn Belt which may not have been adequately balanced with protein supplements. There may also have been a substantial increase in urea feeding in the South to replace the reduced supplies of cottonseed meal. Total oilseed meal consumption was about the same as a year earlier, while feeding of animal proteins increased 12 percent, and grain protein feeds nearly 10 percent over a year earlier.

The number of high-protein feed consuming animal units to be fed this year is now estimated at 157 million--about a million less than in 1966/67. The prospective reduction from last year is due largely to the downward trend in the number of milk cows on farms together with prospects for smaller turkey production this year.

Consumption of protein feeds per animal unit was estimated to be about 4 percent higher than a year earlier in the first 5 months of the current feeding year. It probably will remain slightly above last year's level for the entire feeding year. The total tonnage of high-protein feeds to be fed in 1967/68 is now expected to be a little above the 17.6 million tons (soybean meal equivalent) fed in 1966/67. The feeding rate may be slightly above the 1961-65 average of 225 pounds per animal unit.

Soybean Meal Consumption Up 5 Percent

Data on soybean processing and the production of soybean products were revised by the Bureau of the Census in March for the period May 1967 through December 1967. The revised estimate of soybean meal production for October-February 1967/68 is 6,042,000 tons, 125,000 more than previously reported. Based on the revised production figures, domestic consumption of soybean meal during October-February totaled 4,724,000 tons, 5 percent more than in that period of 1966/67 (table 20).

Increased soybean meal consumption so far this year has been due in part to lower soybean meal prices and the much smaller supplies of cottonseed meal available. The demand for soybean meal, however, has been influenced by sharply increased supplies of fish meal. The export demand for soybean meal continued strong, however, with 1,284,000 tons exported during October-February, 11 percent above a year earlier. This would indicate larger total exports this year and an increase in the total disappearance in soybean meal in the 1967/68 feeding year.

Supplies of Other High-Protein Feeds

Production of cottonseed meal during October-February amounted to 926,000 tons. This was more than 200,000 tons below production in the same period last year and much below the 5-year average for that period. Domestic consumption for those months totaled 884,000 tons, about 21 percent less than a year earlier, while exports were negligible. Even with the much smaller production this year, cottonseed meal stocks increased from 105,000 tons on October 1 to 168,000 on March 1, when they were 42,000 tons higher than a year earlier.

Cottonseed meal production probably will continue below a year earlier this spring, but is expected to increase later this summer when the 1968 crop becomes available. The prospective increase in supplies of cottonseed for 1968/69 is expected to substantially enlarge supplies of cottonseed meal this coming fall and winter. Domestic consumption of linseed meal has been about 25 percent smaller so far this year than last as a result of reduced production and larger exports.

The quantity of most of the other protein feeds available for feeding so far this year has been larger than a year earlier. The 950,000 tons of grain protein feeds fed during October-February was about 10 percent larger than a year earlier. An estimated 372,000 tons of fish meal was consumed during the 5 months, about 120,000 tons more than in the same period of 1966/67. Consumption of tankage and meat meal totaled 869,000 tons which was slightly larger than in the same period last year.

High-Protein Feed Prices Below a Year Earlier

Prices of most of the high-protein feeds have averaged below a year earlier so far during the 1967/68 feeding year. The high-protein feed index of wholesale prices averaged 9 percent lower during October-March than in that period of 1966/67. Oilseed meal prices were about 8 percent lower, while animal protein feeds were down 13 percent and grain proteins were about 12 percent below those of a year earlier. Prices of high-protein feeds have been comparatively stable this fall and winter, whereas a year ago prices declined from December to March. In March, the high-protein feed price index was 1 percent higher than in November and only about 4 percent lower than a year ago.

Soybean meal prices at Decatur averaged $73.60 per ton during October-March, $7.00 lower than in the same period of 1966/67. Last fall, they were much lower than a year earlier. But, they have strengthened in recent months, averaging $75.00 per ton during March--only $1.60 lower than a year earlier. The large supply of soybeans available for crushing and prospects for stable soybean prices for the remainder of the marketing year are expected to give stability to soybean meal prices this spring and summer. The average price at Decatur for April-September may be only a little below the average of $77 per ton in that period last year.

Cottonseed meal prices at Memphis averaged $77.10 per ton during October-March, about 2 percent lower than a year earlier. Cottonseed meal prices continue high in relation to soybean meal. In the first half of 1967/68, cottonseed meal at Memphis averaged $3.50 per ton higher than soybean meal at Decatur, compared with $7.00 per ton lower for the 1961-65 average. Larger stocks of cottonseed meal on hand and prospects for a much larger cottonseed crop in 1968 are expected to bring this price relationship nearer to normal later this summer and next fall.

Linseed meal prices so far this year have been about 2 percent below a year earlier, while peanut meal prices have been about 10 percent lower.

Prices of animal protein feeds have declined more than prices of most of the other protein feeds during the past year, principally as a result of the larger supplies of fish meal. The price of fish meal at New York averaged $120 per ton during October-March, nearly $24 lower than a year earlier and the lowest for that period since 1960/61. In March, fish meal prices at New York were 14 percent below a year earlier and 16 percent below the 1961-65 average. Prices of tankage and meat meal also have been relatively low this year, averaging about 12 percent lower at Chicago during October-March than in the same period of 1966/67.

GOVERNMENT PROGRAMS AND PRICE SUPPORT ACTIVITY

Results of the 1967 Feed Grain Program

In 1967 about 1.3 million farmers participated in the Feed Grain Program--about 43 percent of the total farms with a feed grain base. While the number of farms participating in the program was a little less than in 1965 and 1966 (when the program included barley), the 43 percent of the farmers participating was close to the percentage in the 2 preceding years. Because of changes in the 1967 Program, including the elimination of barley from the acreage diversion provisions, the results of the 1967 Program cannot be compared directly with those for 1965 and 1966 Programs. The total base acreage of corn and grain sorghums on participating farms was 66.4 million acres, nearly 58 percent of the National base acreage. This is 2 million acres less than the comparable base acreage in 1966 and 5 million less than in 1965 (table 11).

Because of the change in the program in 1967, which eliminated voluntary acreage diversion for payment on large farms, and the lower participation, the total acreage diverted was substantially less than in 1965 or 1966. Farmers diverted a little over 16 million acres of corn to soil-conserving uses--nearly 8 million less than in 1966. Grain sorghum producers diverted a little over 4 million acres, much less than the 7 million acres diverted in the 2 preceding years. The 20.3 million acres diverted from corn and grain sorghums was nearly 11 million acres less than was diverted from the 2 grains in 1966 and was more than 14 million acres less than the total acreage diverted (including barley) in 1966.

In 1967 farmers with a base acreage of over 25 acres could request that their base be temporarily reduced to 25 acres to qualify as "small farms" and receive acreage diversion payments on the 25 acres diverted to soil-conserving uses. Farmers choosing this alternative diverted an additional 1.7 million acres from corn to other crops or soil-conserving uses and about 0.9 million acres from sorghums, in addition to the acreage they diverted for payment.

The acreage diverted at the 20 percent level, for which no payment was made, is estimated at about 10.5 million acres on the basis of the total base acreage on the large farms. In 1967 only "small farms" with a feed grain base of 25 acres or less were eligible for acreage diversion payments. These farms accounted for about 6.3 million of the total acres diverted. Farmers requesting their base be temporarily reduced to 25 acres diverted about 3.5 million. In addition they reduced their acreage 2.6 million acres from their original base.

Table 11.--Summary of results of the 1965, 1966 and 1967 Feed Grain Programs, United States

Item	Unit	1965 Program				1966 Program				1967 Program 1/		
		Corn	Grain sorghum	Barley	Total	Corn	Grain sorghum	Barley	Total	Corn	Grain sorghum	Total
Number of farms 2/												
Farms with feed grain base	Thous.	2,780	514	475	3,182	3/	3/	3/	3,171	2,771	514	3,027
Farms participating 4/	Thous.	1,215	296	238	5/1,427	3/	3/	3/	5/1,404	3/	3/	1,308
National base acreage 6/	Mil. acres	90.3	24.5	18.0	7/132.8	90.4	24.7	18.0	7/133.2	90.3	24.6	114.9
Base acreage on participating farms 8/	Mil. acres	54.0	17.2	11.5	82.7	51.1	17.1	9/10.8	79.0	49.5	16.9	66.4
Percentage of U. S. base	Pct.	60.0	70.8	63.9	62.3	56.5	69.2	60.0	59.3	54.8	68.7	57.8
Acreage diverted												
U. S. total 8/ 10/	Mil. acres	24.0	7.0	3.7	34.7	23.7	7.3	3.7	34.7	16.2	4.1	11/20.3
Percentage of:												
U. S. base acreage	Pct.	26.6	28.6	20.6	26.1	26.2	29.6	20.6	26.1	17.9	16.7	17.7
Base acreage on participating farms	Pct.	44.4	40.6	32.2	42.0	46.4	42.7	34.3	44.0	32.7	24.3	30.6
Acreage planted												
U. S. total	Mil. acres	65.1	17.1	10.1	7/92.3	66.3	16.4	11.1	7/93.8	70.9	19.2	90.1
Acreage on participating farms	Mil. acres	26.5	8.6	3.4	7/38.5	24.6	8.3	9/4.1	7/37.0	28.0	11.1	39.1
Percent of total	Pct.	40.7	50.3	33.7	41.7	37.1	50.6	36.9	39.4	39.5	57.8	43.4
Payments earned												
Diversion payments	Mil. dol.	760	145	46	12/951	579	104	26	12/709	302	23	325
Price support payments	Mil. dol.	334	80	17	431	449	116	21	586	428	114	542
Total		1,094	225	63	12/1,382	1,028	220	47	12/1,295	730	137	867

1/ Preliminary. 2/ Total farms are not the sum of the farms by kinds of grain since individual farms may produce more than one feed grain. 3/ Not available by grains. 4/ Includes all farms earning a diversion, price support, or substitute crop payment and farms diverting to substitute crops for which there was no diversion payment. 5/ Includes farms participating under the oat-rye and wheat substitution provisions of the program. 6/ Based on 1959 and 1960 averages, including acreage in the Conservation Reserve Program and proven acreage. 7/ Excluding oats and rye. 8/ Total excludes oats and rye: base acreage, 477,000 acres in 1965 and 237,000 in 1966; acreage diverted, 65,000 acres in 1965 and about 2,600 in 1966. 9/ Includes acreage on farms producing malting barley exempt from the acreage diversion provisions of the program. 10/ Total diversion not compiled by States in 1966 and 1967; for those 2 years national totals computed on basis on acreages diverted for payment plus estimated acreages diverted at the 20 percent level without payment. 11/ In addition 2.6 million acres were diverted from corn (1.7 million) and sorghums (0.9 million) to other crops and conservation uses by farmers requesting treatment as "small farms" bringing the total diversion to 22.9 million acres. 12/ Includes oat and rye diversion payments of $253,000 in 1965 and about $8,000 in 1966.

Compiled from reports of Agricultural Stabilization and Conservation Service.

It is estimated that corn and grain sorghum farmers participating in the program planted 39.1 million acres to these 2 grains in 1967 which was about 6 million acres more than in 1966. Although barley was not included in the acreage diversion program, barley producers reduced the acreage seeded to barley by a million acres since much of the diverted barley acreage was seeded to wheat. Wheat farmers participating in the program signed up for substitution of a little over 2.7 million acres of wheat on their barley base. Of the total 1967 U.S. acreage planted to corn and grain sorghums, about 43.4 percent was on the farms of participants, compared with 39.4 percent in 1966 and 41.7 percent in 1965.

Changes in the 1967 Feed Grain Program resulted in a substantial reduction in the diversion payments. The total payments to farmers participating in the feed grain program amounted to $867 million, 33 percent less than in 1966. The acreage diversion payments, which were made entirely to farmers with small base acreages (25 acres or less) totaled only $325 million, less than half the diversion payments made in 1966. The price support payments to corn and grain sorghum producers amounted to $542 million, only a little below the $565 million received for these 2 crops in 1966, but $128 million more than the comparable payments for 1965.

Feed Grain Prices Including Price Support Payments

Farmers have received price support payments for feed grains in each of the past 5 years in addition to the loans and market prices. The price support payments are made only to farmers participating in the program. In the past 2 years these payments have been computed on the basis of the projected production on 50 percent of the farmer's base acreage. The total price support payments earned by farmers under the program have been divided by the total production in each of these years to arrive at the average per bushel payment for all corn produced. These payments also were divided by the estimated total production of farmers participating in the program to obtain the average payment per bushel received by participants for their entire production. The payments derived in this manner have been added to the season average prices received for feed grains to obtain prices including the payments for the years 1963-67 as shown in table 12.

During these 5 years the payments for corn to participating farmers have ranged from 15 to 30 cents per bushel. The rate of payment for 1967 corn was 30 cents per bushel, which was made on the projected production on 50 percent of the farmer's base acreage, but not in excess of the acreage actually planted (except farmers planting 45 to 50 percent of their base were considered as planting 50 percent). The total payments earned by farmers amounted to about $428 million. The total payments when divided by the U.S. production would give an average payment of about 9 cents per bushel, raising the season average price from $1.07 per bushel as estimated in December to $1.16.

The average rate of payment on 1967 corn produced by participants would be about 20 cents per bushel which would increase the season average price to participating farmers to around $1.27 per bushel. The average payment to participants this year was below the average of 25 cents per bushel in 1966. This was due largely to the increase in production on participating farms due to the smaller acreage diverted, which reduced the payment per bushel.

Average price support payments also were computed for the 1967 sorghum grain crop. The average sorghum grain payment was about 27 cents per cwt. for the entire U.S. production and 36 cents for participating farmers. Since barley was not included in the acreage diversion provisions of the 1967 Program, price support payments were not made for barley as was the case for the 1963-66 crops. The price support payments for corn and sorghum grain in 1967, based on U.S. production, averaged a little lower than in 1966 but were higher than for the 1963-65 crops.

Table 12.--Corn, sorghum grain and barley: Price support payments, season average prices and average prices including payments, 1963-67

Item	Price support payments		United States				Participants in Feed Grain Program		
	Total 1/	Rate per bu. 2/	Total production	Season average price	Average payment per bushel produced	Season average price including payment	Estimated production 3/	Average payment per bushel produced	Season average price including payment 4/
	Mil. dol.	Dol.	Mil. bu.	Dol. per bu.	Dol.	Dol. per bu.	Mil. bu.	Dol.	Dol. per bu.
Corn									
1963	304.8	18	4,019	1.11	.076	1.19	1,969	.15	1.26
1964	223.5	15	3,484	1.17	.064	1.23	1,535	.15	1.32
1965	333.9	20	4,084	1.16	.082	1.24	1,956	.17	1.33
1966	449.0	30	4,117	1.24	.109	1.35	1,779	.25	1.49
1967 5/	428.5	30	4,722	1.07	.091	1.16	2,190	.20	1.27
Barley									
1963	19.1	14	393	.897	.049	.946	154	.12	1.02
1964	13.0	12	386	.947	.034	.981	132	.10	1.05
1965	16.8	16	392	1.02	.043	1.06	146	.12	1.14
1966	20.6	20	393	1.05	.053	1.10	123	.17	1.22
1967 5/	6/	6/	370	1.02	---	1.02	6/	6/	6/
Grain sorghum		Per cwt.		Per cwt.	Per cwt.	Per cwt.		Per cwt.	Per cwt.
1963	59.1	29	585	1.74	.18	1.92	364	.29	2.03
1964	45.5	23	490	1.87	.17	2.04	304	.27	2.14
1965	80.5	35	673	1.79	.21	2.00	444	.32	2.11
1966	116.1	53	715	1.84	.29	2.13	463	.45	2.29
1967 5/	113.9	53	766	1.79	.27	2.06	563	.36	2.15

1/ Total price support payments earned by farmers participating in the Feed Grain Program. 2/ Payment made on the computed "normal" production on the participant's permitted acreage in 1963-65 and the projected production on 50 percent of his base acreage in 1966 and 1967. 3/ Production computed on the basis of acreage planted on participant's farms and U.S. average yield. Includes grain equivalent of silage and forage. 4/ U.S. season average price, plus average price support payments to participants. 5/ Preliminary. 6/ Not included in 1967 Program.

Table 13.--Feed grains: National average price supports, 1966-68 programs

Grain	1966 Program			1967 Program			1968 Program		
	Price support			Price support			Price support		
	Loan	Payment	Total support	Loan	Payment	Total support	Loan	Payment	Total support
Corn, per bu.	$1.00	$0.30	$1.30	$1.05	$0.30	$1.35	$1.05	$0.30	$1.35
Oats, per bu.	.60	---	.60	.63	---	.63	.63	---	.63
Barley, per bu.	1/.80	.20	1.00	.90	---	.90	.90	---	.90
Grain sorghum, per cwt.	1.52	.53	2.05	1.61	.53	2.14	1.61	.53	2.14

1/ Malting barley producers using exemption provision are eligible to receive 12½ cents per bushel in addition to loan rate - no price support payment.

Table 14.--Application, maturity and delivery periods for 1967 crops

Feed grain	Loans available from time of harvest through	Maturity date of loans	Delivery months for most of the grain
Corn	June 30, 1968 1/	July 31, 1968 1/	August-October
Sorghum grain	May 31, 1968 2/ June 30, 1968	June 30, 1968 2/ July 31, 1968	July-September
Oats	March 31, 1968 3/ April 30, 1968 3/	April 30, 1968 3/ May 31, 1968 3/	May-July
Barley	March 31, 1968 4/ April 30, 1968 4/	April 30, 1968 4/ May 31, 1968 4/	May-July

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1/ For most States; for farm stored corn earlier dates may be established for some areas.

2/ Oklahoma and Texas; all other States June 30 and July 31.

3/ April 30 and May 31 for Alaska, Idaho, Maine, Michigan, Minnesota, Montana, North Dakota, Oregon, South Dakota, Washington, Wisconsin, and Wyoming, and March 31 and April 30, 1968, for all other States.

4/ April 30 and May 31 for Alaska, Idaho, Minnesota, Montana, North Dakota, Oregon, South Dakota, Washington, Wisconsin, and Wyoming, and March 31 and April 30, 1968, for all other States.

Summarized from Commodity Credit Corporation Grain Price Support Regulations, Agricultural Stabilization and Conservation Service, USDA.

Table 15.--Feed grains: Quantities placed under price support, 1961-67 crops

Feed grain	Season total for crops of: 1/						Through February	
	1961	1962	1963	1964	1965	1966	1966 crop	1967 crop
	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.
Corn	658.6	590.8	395.3	215.7	214.9	262.7	217.7	386.9
Sorghum grain	196.3	219.4	141.4	82.8	106.0	27.7	26.6	60.8
Oats	20.6	32.0	38.9	42.6	43.7	22.6	21.3	34.2
Barley	44.2	39.9	28.2	15.0	16.5	16.4	14.8	41.0
Total (Mil. tons)	25.3	24.2	16.3	9.4	10.1	8.8	7.5	14.1

1/ Placed under loan and purchase agreement for 1961-63; quantities placed under loan for 1964-67, plus minor quantities purchased by CCC for 1964-66.

Compiled from fiscal and operating reports of the Agricultural Stabilization and Conservation Service.

More Feed Grains Going Under Loan

Farmers are placing much larger quantities of feed grains under the price support program this season than in any of the past 3 years. Through February, a little over 14 million tons had been placed under loan from the 1967 crops, almost twice as much as a year earlier (table 15).

Despite the lateness and heavy moisture content of the crop, the corn loan activity got off to a quick start with a near-record quantity placed under loan through January. As prices rose during late January and February, the rate was slower, with the total falling well below the huge volume placed under loan from the 1960, 1961 and 1962 crops. Through February, 387 million bushels of corn had been placed under loan, much larger than the 218 million of last year but less than from the 1960-62 crops, which ranged from 412 to 476 million bushels. In those 3 years, about 62 to 79 percent of the total for the year had been placed under loan through February.

Although price support activity has increased outside the Corn Belt this year, those areas account for only a small part of the total. Over 95 percent of the total corn placed under loan through February was in the North Central Region. Four States accounted for over 80 percent of the total--Iowa, 36 percent; Nebraska, 18 percent; Minnesota, 15 percent; and Illinois, 12 percent. It now appears likely that the total quantity placed under loan for the entire season will fall short of the huge volume from the 1960-62 crops.

Even though prices of the other feed grains have been generally above the loan rates, quantities placed under loan have been well above those of a year earlier. Through February, sorghum producers had placed over 60 million bushels under loan, more than double the quantity in that period last year. Although comparatively small in total, the quantities of oats and barley placed under loan through February also were substantially larger than in 1966/67. The 41 million bushels of barley placed under loan through February was the largest in several years, and the 34 million bushels of oats was 13 million more than last year.

Farmers in the Northern tier of States have through April 30 to place barley and oats under loan, but the loan period ended March 31 in most other States. The loan period for corn ends June 30 in most States. Farmers also have through June 30 to place their sorghum grain under loan, except in Texas and Oklahoma where it ends May 31.

CCC Sales of Feed Grains Negligible

Commodity Credit Corporation owned about 10 million tons of feed grains on March 1, about 3 million below a year earlier and the lowest holdings in several years. With the 1967 crop estimated to be fully adequate for our total requirements, CCC sales of feed grains so far this season have been negligible. From October through late March, CCC sold only 83,000 tons, the second consecutive year of small sales. Most of the sales went for export. CCC sales of corn and sorghum grain have each been less than 2 million bushels during this period, much less than a year earlier. Oats and barley sales also have been light, compared with last year. Sales of feed grains for the remainder of the season likely will continue relatively small. Most of the sales probably will be for export.

FOREIGN TRADE AND FEED SUPPLIES IN OTHER COUNTRIES

U.S. Corn Exports Increase; Other Feed Grains Decrease

U.S. exports of the 4 feed grains combined during October-February totaled 10.8 million short tons, 10 percent above that period of 1966/67. For the entire marketing season, exports are expected to be about 10 percent above last year's 22 million tons (table 6).

Corn exports during October-February totaled 285 million bushels, almost a third above a year earlier. This heavy movement has been largely due to stronger feed demands in Europe and Japan, plus lower domestic prices. Since the corn crops to be harvested this spring in Argentina and the Republic of South Africa will be smaller than the big 1967 harvests, U. S. exports are expected to continue above a year earlier during the remainder of the marketing year. For the entire season, they are expected to be nearly a third larger than the 488 million bushels in 1966/67.

Exports of other feed grains have been much lower so far in 1967/68 than a year earlier. Sorghum grain exports totaled 89 million bushels in October-February--28 million less than in that period of 1966/67. Sorghum grain prices have been high in relation to corn, making corn more attractive to foreign buyers. Also, P. L. 480 shipments to India have been much smaller than a year earlier--down from 35 million bushels to 13 million through February. For the entire season, sorghum exports probably will be around a fourth smaller than the 248 million bushels shipped last year.

The 26 million bushels of barley exported during July-February was about a sixth below shipments in that period a year earlier. For the entire season, exports probably will be somewhat below the 45 million bushels exported in 1966/67 and the lowest since 1953. Recent oat exports have declined sharply from those of earlier months. From July through February, exports were about 7 million bushels, well below the 16 million bushels in that period a year earlier. Exports for the season likely will fall well below the 19 million bushels exported in 1966/67.

Smaller Argentine Corn Crop in Prospect; Little Change in Grain Sorghums

Argentina's 1968 corn production is now estimated at 260 million bushels, nearly a fifth below last year's large crop, but a third above the 1961-65 average (table 21). For the April-March 1967/68 season just ended, total exports were estimated at around 160 million bushels--a little above shipments in 1966/67 and the highest level since the late 1930's.

The poor condition of Argentine pastures this past year and relatively high hog prices stimulated increased corn feeding in 1967/68. Apparent domestic use rose sharply to a record of about 155 million bushels. Argentina's corn requirements in 1968/69 will continue to be influenced by the condition of pastures which have been severely affected by drought in recent months. Exports in 1968/69 presently are forecast in a range of 100 to 120 million bushels.

Argentine exports were very heavy in the first 4 months (April-July) of 1967/68, amounting to nearly 120 million bushels, or about three-fourths of the total for the year. Exports of corn are expected to be much smaller this spring and summer, since port elevators are full of wheat acquired under that country's price support program. This will give a more even distribution of corn exports in 1968/69 than in 1967/68. To date, somewhat over 40 million bushels of the new crop has been booked for export, with Italy being the principal buyer.

Even though 1968 sorghum acreage is up substantially from 1967, dry weather reduced yield prospects. The current estimate of Argentina's sorghum grain crop is about the same as last year's level of 54 million bushels.

South African Corn Crop Below Year Earlier

The Republic of South Africa's 1968 corn crop is now estimated at 215 million bushels, substantially below the record high 389 million of last year. Although seeded acreage was about 6 percent above 1967, drought during January and February sharply lowered yield prospects. General rains in early March provided only limited relief. The final size of the crop still depends to some extent on weather between now and May, when the bulk of the harvest gets under way.

For the May-April 1967/68 marketing year, exports of corn from South Africa are expected to total about 110 million bushels, the largest level in 4 years. The May 1 carryover likely will be around 100 million bushels. This unusually large carryover, coupled with the prospective crop, would give a total 1968/69 supply of about 315 million bushels. While this would be about a fifth below the 1967/68 supply, it would be about a third larger than the 1961-65 average. If domestic consumption in 1968/69 continues at about the same level as in the last 2 years, this would leave about 120 million bushels for export and carryover at the end of the year.

Plantings of sorghum grain were sharply reduced and the crop was also hit hard by drought. A preliminary estimate of production is about 10 million bushels, compared with an unusually large 37-million bushel crop in 1967. This would mean much smaller exports in 1968/69 than the approximate 14 million bushels exported in 1967/68.

Smaller West European Feed Grain Crop in Prospect

With a normal growing season this year, feed grain production in Western Europe could be about 3 or 4 percent below the record high level of 65.6 million short tons in 1967. Even if high levels of fertilization are continued, feed grain yields per acre this year probably will be below last year's record levels, when weather conditions were good to excellent. Lower yields would be expected for practically all of the European countries. Most of the decrease would be in barley production, although oats are expected to continue their decline of the past several years.

In contrast to 1966/67, favorable weather for fall planting in 1967 resulted in wheat acreage in the United Kingdom and France increasing to nearer normal levels. This is expected to result in reductions in 1968 barley acreages in these 2 countries. Greece also has substantially reduced barley acreage. Producers in West Germany, on the other hand, are expected to pursue the upward trend in area planted to barley. Increased corn acreages are anticipated in Italy and France.

HAY PRICES—PREDICTING THEIR CHANGE

by Jack S. Ross [1]

Among a number of demand supply factors influencing the price of hay, the following appeared to be most important in the past decade: (1) hay production, (2) pasture-feed conditions, (3) number of hay-consuming livestock, (4) hay supply per roughage-consuming animal unit and (5) prices received by farmers for beef cattle and dairy products. Three simple estimating equations, based on various combinations of these factors, explained about 85 to 95 percent of the variation in prices for hay in 1957-66. Net relationships among these variables were examined as a basis for estimating the price of hay one season in advance.

Recent Trends in Hay Sales

Production and marketings of most agricultural crops now are much more commercialized than they were 2 or 3 decades ago. In the case of hay, however, commercial sales did not begin to expand rapidly until about 10 or 12 years ago. In 1956, about 15 million tons of hay were sold by farmers, an increase of only about 10 percent from the previous 10 years. During recent years, annual sales have increased sharply to 22 to 23 million tons, an increase of about 50 percent since the mid-1950's. Sales have also increased and at a more rapid rate than production--increasing from 14 percent of the 1956 crop to nearly 18 percent of the 1966 crop. Another way of expressing the sharp rise in off-farm disposition is value of sales. For each of the last 5 crops, the value of hay sold has exceeded half a billion dollars, well above earlier years. Production of hay as a cash crop has expanded sharply over the past 10 years--particularly in the Midwest, Mountain, and Pacific Coast areas of the nation.[2]

Seasonal Variations in Price

Although this analyses is directed toward factors influencing year-to-year changes in the price of hay, there are fairly wide seasonal variations in hay prices. They are seasonally higher in the winter than other seasons of the year. This is all a part of a seasonal price rise which principally reflects handling and storage costs, and a reduction in moisture content of the hay. During 1955-66, the average seasonal rise in prices from July to February was nearly $3 per ton, or 14 percent.

Factors Considered in Analysis

Originally, 16 factors were considered as having a possible influence on the season average price of hay. These were:

Supply factors which included carry-over, production and total supplies of hay, production of silage, pasture-feed conditions, and the supply of feed concentrates.

Demand factors which included prices received by farmers for beef cattle and dairy products, cash receipts from beef cattle and dairy products, and numbers of dairy and beef cattle.

Major Factors Influencing the Price of Hay

Using standard statistical techniques, the original 16 factors were narrowed down to the following which appeared to be major factors influencing the farm price of hay (Y_0) during 1957-66.[3]

Hay production (X_2)
Pasture conditions (X_{15})
Number of roughage-consuming animal units (X_{12})
Hay supply per roughage-consuming animal unit (X_{16})

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[1] Agricultural Economist, Economic and Statistical Analysis Division, Economic Research Service, USDA.

[2] For a more detailed discussion of hay trends by regions see Feed Situation, August 1966, pp. 22-30.

[3] The basis for selecting these variables was largely the matter of judgment, taking into consideration single correlations, and intercorrelations between variables.

Prices received by farmers for dairy products and beef cattle (X_7)

Equation I

$$Y_0 = \underset{4/}{27.069} - \underset{[.074]}{.190\,X_2} - \underset{[.105]}{.264\,X_{15}}$$

$$+ \underset{[.079]}{.269\,X_{12}} + \underset{[.052]}{.122\,X_7}$$

$$R^2 = .94 \qquad S_{1.234} = \$.68$$

Y_0 = Season average price received by farmers for hay, dollars per ton

X_2 = Hay production, million tons

X_{15} = Pasture-feed conditions--percent of normal, April-September average

X_{12} = Number roughage-consuming animals, million units

X_7 = Index of prices received by farmers for dairy products and beef cattle, 1957-59=100

Although some intercorrelation would be expected among these variables, the signs of the coefficients appear to be logical and the standard errors of the regression coefficients are relatively small.4/

This analysis shows that a 1-million-ton change in the hay crop was accompanied by a change of about 19 cents per ton in price in the opposite direction when other variables were held constant. A 1-percentage-point change in pasture-feed conditions was accompanied by a 26 cents per ton change in prices in the opposite direction. The net effects of other factors in this and other equations in the analysis are shown in table 16.

Elasticities computed at the mean levels for the variables are relatively high--a 10 percent increase in hay production or pasture-feed conditions would accompany a decline of about 10 percent in price. Similarly, an increase of 10 percent in roughage-consuming livestock would tend to increase the price by around 10 or 12 percent. A 10 percent increase in prices of beef cattle and dairy products was associated with a 5 percent increase in the hay price.

Using 1967/68 estimates from table 18 for the variables in equation I--X_2 = 126.4, X_{15} = 80, X_{12} = 102.7, X_7 = 116--would suggest a price of around $23.50 to $24.00 per ton for the 1967 hay crop. In December, the Statistical Reporting Service of the Department made a preliminary early season estimate of $24.80 per ton for the crop. This estimate was based on indications through November 1967 and will be subject to revision in the May issue of Field and Seed Crops.

Estimates of the independent variables (X values) generally can be made and substituted into equation I early in the marketing season. By mid or late summer we should have some idea of what hay production actually will be for the season and how pasture-feed conditions are running relative to a year earlier. We also have preliminary indications on hay consuming livestock to be fed during the season. Because it is difficult to anticipate prices received by producers for beef cattle for the coming season, we have avoided using many of those factors which are not available early in the season.

The second appraisal relates hay prices to pasture conditions X_{15}, hay supply per roughage-consuming animal unit X_{16} and prices received by farmers for dairy products and beef cattle X_7. These independent variables combined accounted for almost 90 percent of the change in hay prices during 1957-66.

Equation II

$$Y_0 = 53.126 - \underset{[.133]}{.271\,X_{15}} - \underset{[6.311]}{15.394\,X_{16}}$$

$$+ \underset{[.055]}{.124\,X_7}$$

$$R^2 = .89 \qquad S_{1.23} = \$.86$$

4/ Standard errors of the regression coefficients are in brackets below the coefficients.

Table 16.--Approximate effect of various factors on hay prices, computed from equations I, II and III 1/

Item	Unit of change	Resulted in: 2/ Approximate change in the price of hay	Resulted in: 2/ Direction of change
		Cents per ton	
Equation I			
Hay production	1 mil. tons	19	Opposite
Pasture-feed conditions	1 pct. point	26	Opposite
Number roughage-consuming animals	1 mil. units	27	Same
Index of prices received by farmers for beef cattle and dairy products	1 pct. point	12	Same
Equation II			
Pasture conditions	1 pct. point	27	Opposite
Hay supply per roughage-consuming animal unit	.01 ton	15	Opposite
Index of prices received by farmers for beef cattle and dairy products	1 pct. point	12	Same
Equation III			
Hay production	1 mil. tons	17	Opposite
Number roughage-consuming animals	1 mil. units	42	Same

1/ Based on data for 1957-66. 2/ Approximate price change and direction of change in relation to a unit change in each of the major factors influencing hay prices, assuming other factors in the equation unchanged. For example, a 1-million-ton increase in hay production resulted in a 19 cents per ton decrease in prices.

A third alternative relates hay prices to hay production X_2 and number of roughage-consuming animal units X_{12}. These variables accounted for nearly 85 percent of the change in hay prices in 1957-66.

Equation III

$$Y_0 = 1.215 - \underset{[.0894]}{.168\,X_2} + \underset{[.0676]}{.415\,X_{12}}$$

$$R^2 = .84 \qquad S_{1.23} = \$.95$$

Of the 3 equations used in the analysis, equation I provides the best results. However, equations II and III contain variables which may be more readily available earlier in the season. Equation III with 2 variables could be used very early in the growing season while II and I may be used later in the season when more data become available.

Using equation III which relates hay prices to hay production and roughage consuming animals, the March 1 acreage intentions (as an indicator of production) and (projected continued large) numbers of roughage consuming animals would suggest a price about as high as the $23.50 to $24.00 indicated for the 1967 hay crop. Obviously an estimate at this time would not reflect the possible effects of large changes in other factors for which current indications are not available.

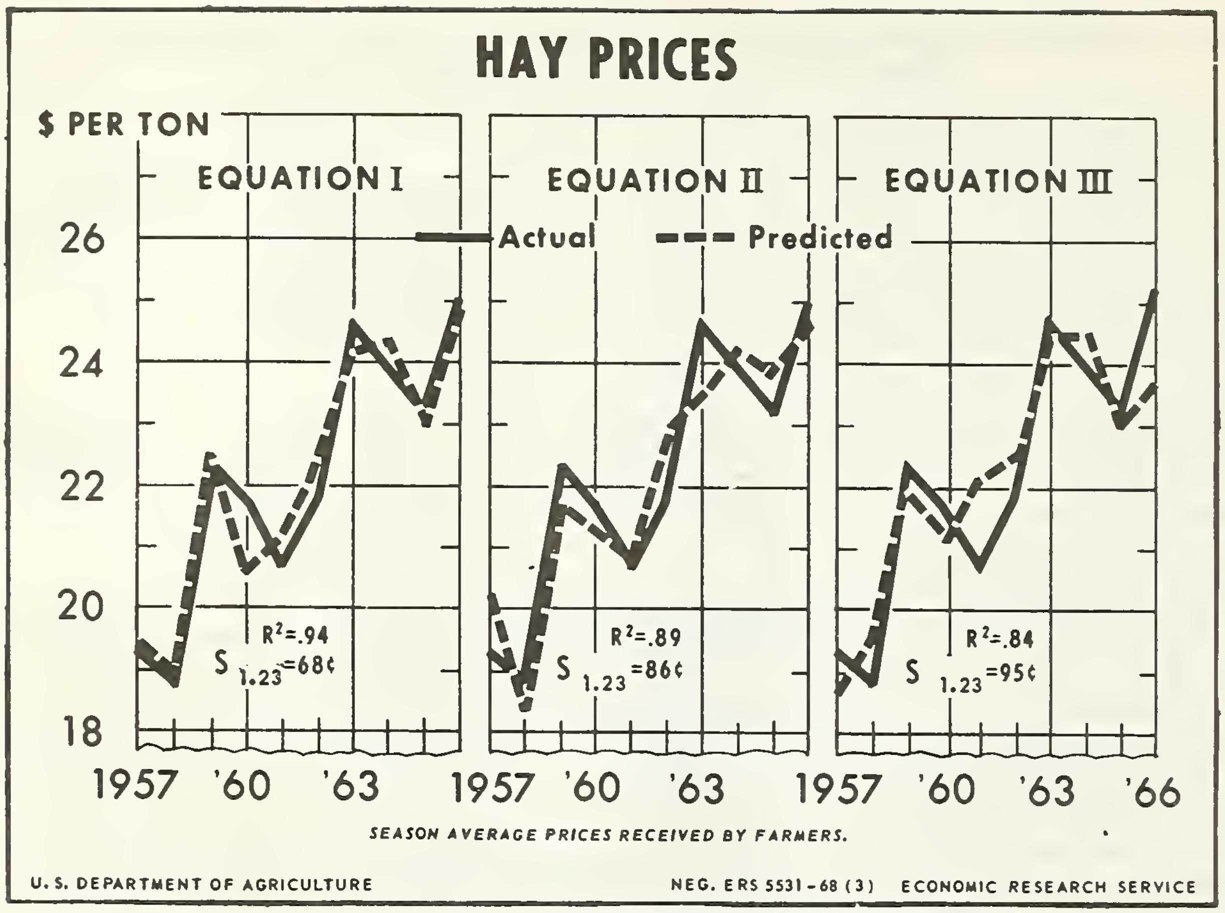


Table 17.--Hay: Prices received by farmers, per ton, actual compared with predicted, 1957-67

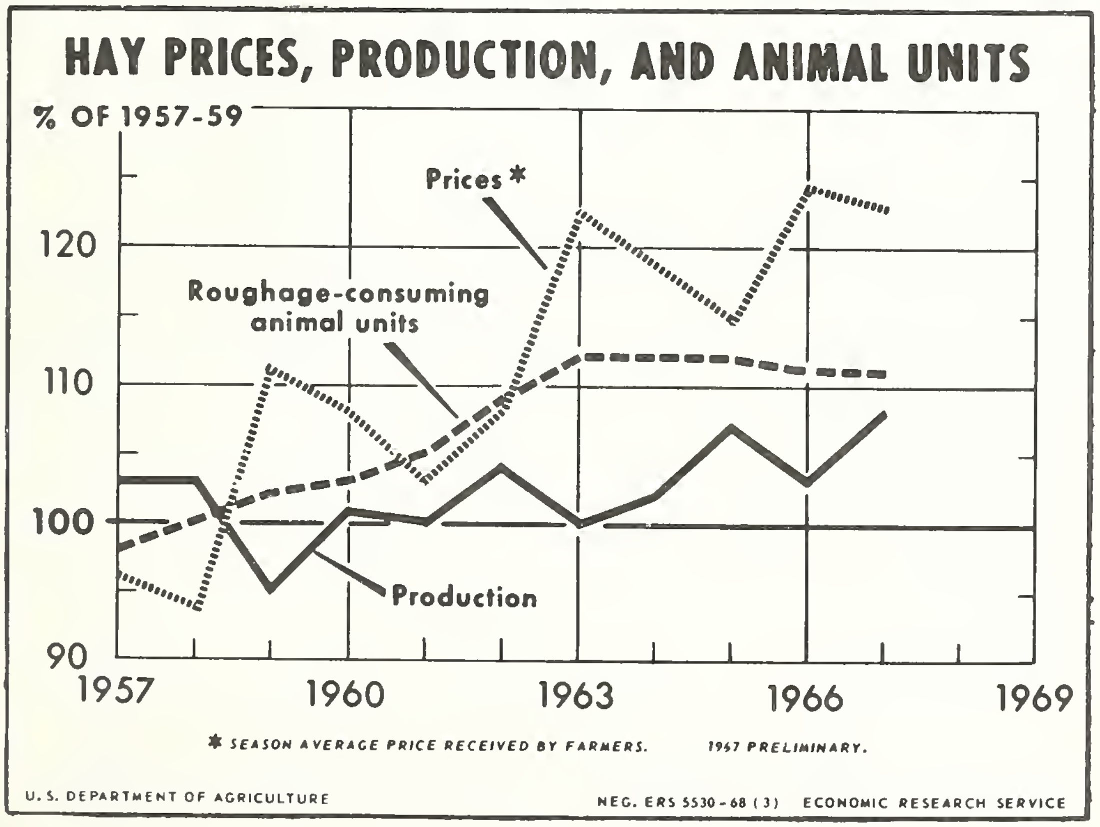
Crop of	Hay prices received by farmers						
	Actual	Equation I		Equation II		Equation III	
		Predicted	Difference	Predicted	Difference	Predicted	Difference
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
1957	19.30	19.40	-.10	20.20	-.90	18.70	.60
1958	18.80	19.00	-.20	18.40	.40	19.50	-.70
1959	22.30	22.50	-.20	21.70	.60	21.90	.40
1960	21.70	20.60	1.10	21.30	.40	21.10	.60
1961	20.70	21.20	-.50	20.70	.00	22.10	-1.40
1962	21.80	22.40	-.60	22.90	-1.10	22.50	-.70
1963	24.60	24.10	.50	23.50	1.10	24.40	.20
1964	23.90	24.30	-.40	24.20	-.30	24.40	-.50
1965	23.20	23.00	.20	23.80	-.60	23.10	.10
1966	25.00	24.80	.20	24.50	.50	23.60	1.40
1967	1/24.80	2/23.70	1.10				

1/ Based on indications in November 1967; subject to revision in the May issue of Field and Seed Crops, Crop Reporting Board, SRS. 2/ Unofficial estimate.

Table 18.--Factors used in predicting hay prices, 1957-68

Crop of or year beginning October	(X_2) Hay production	(X_{15}) Pasture-feed conditions (Apr.-Sept. average)	(X_{12}) Roughage-consuming animal units	(X_{16}) Hay supply per roughage-consuming animal unit	(X_7) Index of prices received by farmers for dairy products and beef cattle (1957-59=100) 1/
	Mil. tons	Pct. of normal	Mil.	Tons	Pct.
1957	120.0	81	90.5	1.52	100
1958	120.1	87	92.5	1.58	106
1959	111.0	80	94.7	1.44	100
1960	118.2	83	95.7	1.41	100
1961	117.0	84	97.6	1.44	101
1962	121.8	78	100.6	1.39	99
1963	117.5	75	103.3	1.36	94
1964	118.8	74	103.9	1.33	97
1965	125.5	80	103.5	1.37	108
1966	121.0	78	102.8	1.40	113
1967 2/	126.4	80	102.6	1.46	3/116
1968 3/	122.0		102.7		

1/ Derived by equally weighting indexes of dairy products and beef cattle. 2/ Preliminary. 3/ Based on March 1968 indications.


HAY PRICES, PRODUCTION, AND ANIMAL UNITS

* SEASON AVERAGE PRICE RECEIVED BY FARMERS. 1967 PRELIMINARY.

U. S. DEPARTMENT OF AGRICULTURE NEG. ERS 5530-68 (3) ECONOMIC RESEARCH SERVICE

Use of Results in Regions

Because national data were used for this analysis, the procedures and results may not be entirely applicable to Regions or States. The hay marketing structure varies considerably by geographical areas. Because of the relatively high cost of shipping hay, there are wide variations in hay prices between regions. Regional hay prices probably are dependent to a considerable extent on supply and demand factors within the region. Also some factors may be much more important in some areas than in others. For example, sheep are much more important in the Western States than in the East or Mid-West. Availability and use of other feedstuffs--competitive or complementary to hay--could be analyzed. Some dairymen may use the rule-of-thumb that when grain can be purchased at less than twice the cost of alfalfa hay--grain is cheaper than hay.

* * * * * *

Table 19.--Feed grains and hay: Acreage planted by regions, annual 1961-68

Year	North Atlantic	East North Central	West North Central	South Atlantic	South Central	Western	United States
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres
				Corn			
1961	1,988	19,759	30,561	6,051	6,550	1,010	65,919
1962	2,041	20,263	30,023	5,630	6,040	1,020	65,017
1963	2,125	21,399	32,607	5,913	5,743	984	68,771
1964	2,126	22,145	29,649	5,655	5,246	1,002	65,823
1965	2,195	22,837	28,829	5,504	4,701	1,053	65,119
1966	2,199	23,731	29,036	5,593	4,592	1,155	66,306
1967 1/	2,277	24,879	32,044	5,877	4,549	1,279	70,905
1968 2/	2,287	23,172	28,502	5,569	4,192	1,192	64,914
				Oats			
1961	1,449	7,320	15,986	1,544	4,232	1,783	32,314
1962	1,389	6,879	14,063	1,346	4,119	1,704	29,500
1963	1,305	6,301	13,734	1,279	3,886	1,549	28,054
1964	1,266	5,616	13,031	1,060	3,168	1,493	25,634
1965	1,192	4,989	12,256	900	3,104	1,569	24,010
1966	1,172	5,020	12,163	846	2,605	1,495	23,301
1967 1/	1,094	4,209	10,986	885	2,214	1,223	20,611
1968 2/	1,051	4,473	11,352	794	2,255	1,289	21,214
				Barley			
1961	248	289	6,538	402	1,648	6,498	15,623
1962	241	269	5,714	386	1,392	6,378	14,380
1963	219	191	5,317	372	1,299	6,054	13,452
1964	193	136	4,225	392	1,042	5,664	11,652
1965	199	113	3,674	385	672	5,056	10,099
1966	212	112	4,266	377	718	5,449	11,134
1967 1/	224	108	4,043	408	471	4,758	10,012
1968 2/	250	127	4,157	399	576	4,759	10,268
				Sorghums, all purposes			
1961	---	28	5,871	176	7,035	1,184	14,294
1962	---	33	6,388	162	7,223	1,254	15,060
1963	---	36	7,864	169	8,042	1,405	17,516
1964	---	39	7,467	178	7,562	1,524	16,770
1965	---	43	7,811	158	7,355	1,712	17,079
1966	---	41	7,139	156	7,585	1,451	16,372
1967 1/	---	41	8,041	176	9,143	1,828	19,229
1968 2/	---	36	6,917	175	8,292	1,585	17,005
				Four feed grains			
1961	3,685	27,396	58,956	8,173	19,465	10,475	128,150
1962	3,671	27,444	56,188	7,524	18,774	10,356	123,957
1963	3,649	27,927	59,522	7,733	18,970	9,992	127,793
1964	3,585	27,936	54,372	7,285	17,018	9,683	119,879
1965	3,586	27,982	52,570	6,947	15,832	9,390	116,307
1966	3,583	28,904	52,604	6,972	15,500	9,550	117,113
1967 1/	3,595	29,237	55,114	7,346	16,377	9,088	120,757
1968 2/	3,588	27,808	50,928	6,937	15,315	8,825	113,401
				All hay 3/			
1961	6,966	10,973	25,979	3,885	8,537	11,036	67,376
1962	6,834	10,905	26,170	3,705	8,485	11,464	67,563
1963	6,910	10,801	24,605	3,626	9,017	11,469	66,428
1964	6,769	10,761	25,236	3,644	9,366	11,599	67,375
1965	6,628	10,604	25,358	3,488	9,594	12,012	67,684
1966	6,605	10,192	24,481	3,317	9,104	11,441	65,140
1967 1/	6,329	9,790	24,479	3,276	9,023	11,831	64,728
1968 2/	6,245	9,590	23,481	3,228	8,907	11,566	63,017

1/ Preliminary. 2/ Prospective acreage based on March 1 intentions of farmers. 3/ Harvested acreage of all hay.

Table 20.--Soybean cake and meal: Production, stocks, foreign trade, and domestic disappearance, United States, by months, 1962-67

Year beg. Oct. and item	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
1962													
Stocks 1/	93.6	75.3	71.5	96.3	107.4	85.5	131.5	106.1	121.4	153.0	127.6	159.2	
Production	930.6	1,005.7	997.6	1,005.4	909.4	979.0	840.5	965.0	918.2	899.0	921.6	755.0	11,127.0
Exports	101.6	159.6	114.5	39.1	163.5	195.6	126.2	132.3	142.3	120.5	91.3	89.2	1,475.7
Disappearance 2/	847.3	849.9	858.3	955.2	767.8	737.4	739.7	817.4	744.3	803.9	798.7	666.2	9,586.1
1963													
Stocks 1/	158.8	161.3	179.2	172.2	163.4	173.0	172.4	155.3	186.8	143.5	143.6	143.9	
Production	965.7	939.5	933.1	862.4	827.4	810.1	840.4	877.4	850.4	916.0	910.7	875.8	10,608.9
Exports	92.5	154.3	142.5	78.3	113.7	79.1	99.8	125.4	133.6	144.9	162.3	152.1	1,478.5
Disappearance 2/	870.7	767.3	797.6	792.9	704.1	731.6	757.7	720.5	760.1	771.0	748.1	746.0	9,167.6
1964													
Stocks 1/	121.6	135.2	142.1	121.9	208.6	220.4	202.6	217.0	265.4	229.6	194.8	169.3	
Production	1,051.9	1,043.3	1,031.3	1,027.2	900.9	982.0	910.6	973.2	879.8	873.5	889.7	722.3	11,285.7
Exports	154.7	236.7	248.3	44.6	162.6	356.5	171.4	146.2	143.9	144.0	122.8	104.3	2,036.0
Disappearance 2/	883.6	799.7	803.2	895.9	726.5	643.3	724.8	778.6	771.7	764.3	792.4	681.6	9,265.6
1965													
Stocks 1/	105.7	131.2	133.4	95.6	123.4	131.0	151.6	138.5	181.5	174.5	218.7	149.1	
Production	1,024.1	1,153.6	1,163.1	1,192.3	1,073.3	1,172.2	1,039.8	1,189.2	1,071.3	999.5	971.2	851.4	12,901.0
Exports	145.2	299.0	329.7	255.8	273.3	227.1	236.0	220.7	166.4	129.0	175.2	144.2	2,601.6
Disappearance 2/	853.4	852.4	871.2	908.7	792.4	924.5	816.9	925.5	911.9	826.3	865.6	724.7	10,273.5
1966 3/													
Stocks 1/	131.6	149.0	146.1	136.1	151.5	126.6	101.6	163.4	129.5	144.0	167.6	131.7	
Production	1,069.8	1,174.5	1,163.8	1,188.7	1,051.1	1,111.9	1,111.8	1,170.4	1,162.7	1,125.0	1,091.7	1,012.6	13,434.0
Exports	178.5	235.1	262.3	244.8	239.0	220.8	209.1	259.7	207.1	221.4	191.8	187.0	2,656.6
Disappearance 2/	873.9	942.3	911.5	928.5	837.0	916.1	840.9	944.6	941.1	880.0	935.8	819.6	10,771.3
1967 3/													
Stocks 1/	137.7	178.7	186.1	214.3	155.8	172.4							
Production	1,193.0	1,245.1	1,209.5	1,222.1	1,172.5								
Exports	197.2	216.0	323.3	297.4	250.1								
Disappearance 2/	954.8	1,021.7	858.0	983.2	905.8								

1/ Stocks at crushers' plants; beginning of the month.
2/ Domestic disappearance, based on production, exports, and change in crushers' stocks.
3/ Data revised for May through December 1967. Revised data for production and stocks are carried in Current Industrial Report Fats and Oils - Oilseed Crushings, Bureau of the Census, Series M20J, released March 27, 1968.

Compiled from reports of the Bureau of the Census.

Table 21.--Argentine corn: Supply and disappearance, average 1961-65, annual 1959-68

Marketing year beginning April	Supply			Disappearance		
	Beginning stocks 1/	Production	Total	Domestic	Export	Total
	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.
Average 1961-65	4	196	200	92	105	197
1959	25	215	240	118	107	225
1960	15	175	190	104	82	186
1961	4	191	195	121	71	192
1962	3	206	209	93	113	206
1963	3	172	175	70	100	170
1964	5	211	216	82	132	214
1965	2	202	204	95	107	202
1966 2/	2	277	279	112	158	270
1967 2/	9	315	324	155	160	315
1968 3/	9	260	269			

1/ Unofficial estimates. 2/ Preliminary. 3/ Based on March 1968 indications.

Grain Division, FAS, USDA.

Table 22.--Republic of South African corn: Supply and disappearance, average 1961-65, annual 1959-68

Marketing year beginning May	Supply			Disappearance		
	Beginning stocks 1/	Production	Total	Domestic	Export	Total
	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.
Average 1961-65	33	206	239	143	68	211
1959	14	156	170	122	24	146
1960	24	169	193	129	37	166
1961	27	208	235	126	64	190
1962	45	236	281	136	102	238
1963	43	240	283	140	109	249
1964	34	168	202	148	43	191
1965	11	177	2/192	166	19	185
1966 3/	7	199	2/215	194	10	204
1967 3/	11	389	400	190	110	300
1968 4/	100	215	315			

1/ Unofficial estimates. 2/ Includes imports. 3/ Preliminary. 4/ Based on March 1968 indications.

Grain Division, FAS, USDA.

Table 23.--Production, stocks, and foreign trade in processed feeds, foreign trade in feed grains, and corn and barley processing, specified months 1/

Commodity	Production					Stocks 2/				
	1967	1967/68				1967	1968			
	Feb.	Nov.	Dec.	Jan.	Feb.	Mar. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Processed feeds										
Soybean meal*	1,051.1	1,245.1	1,209.5	1,222.1	1,172.5	126.6	186.1	214.3	155.8	172.4
Cottonseed meal	179.1	229.1	196.8	198.0	158.8	126.1	137.1	146.7	161.8	167.6
Linseed meal	26.6	32.4	21.3	24.3	24.7	10.7	3/	3/	3/	3/
Peanut meal	11.9	9.4	10.9	15.2	14.5	7.5	2.8	2.4	2.8	3.3
Meat meal and tankage	166.4	179.4	170.8	178.7	168.0	---	---	---	---	---
Fish meal and solubles	4.1	17.2	11.2	2.5	2.4	---	---	---	---	---
Corn gluten feed and meal	94.8	134.5	115.1	121.2	**	---	---	---	---	---
Brewers' dried grains	23.6	23.9	25.3	25.1	25.9	3.1	4.9	4.6	3.4	2.8
Distillers' dried grains	37.8	40.9	36.4	34.9	38.4	7.2	4.4	4.2	2.9	3.7
Wheat millfeeds	346.3	378.1	370.7	386.2	**	---	---	---	---	---
Rice millfeeds	39.1	42.7	36.2	49.4	53.4	---	---	---	---	---
Alfalfa meal, dehydrated	12.5	17.8	9.9	15.7	13.8	261.8	743.8	628.1	508.5	377.5
sun-cured	34.2	37.8	37.9	31.6	22.0	10.3	22.7	24.9	24.8	21.5
Total	46.7	55.6	47.8	47.3	35.8	272.1	766.5	653.0	533.3	399.0
Inedible tallow	35.8	36.7	37.4	40.2	36.2	---	---	---	---	---

Commodity	Foreign trade									
	Exports					Imports				
	1967	1967/68				1967	1967/68			
	Feb.	Nov.	Dec.	Jan.	Feb.	Feb.	Nov.	Dec.	Jan.	Feb.
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Soybean meal	239.0	216.0	323.3	297.4	250.1	---	---	---	---	---
Cottonseed meal	.2	.1	.4	.1	.1	6.4	5.6	4.5	4.1	4.2
Linseed meal	2.3	31.5	4.5	5.3	3.3	0	0	0	0	0
Other oilseed meals	2.7	2.7	3.1	2.2	3.6	.1	0	0	.2	2.9
Fish meal	---	---	---	---	---	44.4	63.1	70.2	91.0	49.1
Molasses	6,081.1	4,370.3	164.3	5,452.4	238.4	116.7	112.4	183.1	208.4	175.1
Corn byproducts	2.7	49.7	27.7	29.8	24.2	---	---	---	---	---
Wheat millfeeds	0	3.0	1.1	.8	.1	1.5	1.6	3.2	3.3	5.0
Alfalfa meal, dehydrated	11.7	13.1	13.6	13.4	16.3	---	---	---	---	---
sun-cured	18.5	12.5	10.9	16.8	16.1	---	---	---	---	---
Total	30.2	25.6	24.5	30.2	32.4	---	---	---	---	---
Mixed poultry feed	13.0	13.4	11.4	10.1	10.2	---	---	---	---	---
Mixed dairy feed	1.1	.9	1.0	3.4	3.9	---	---	---	---	---
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.
Feed grains (including products)										
Corn	39,512	77,120	62,422	52,864	49,108	75	114	34	138	60
Sorghum grain	17,095	21,341	17,548	14,532	19,461	6	0	0	2	13
Oats	35	568	81	337	477	365	986	202	263	226
Barley	3,065	4,027	273	1,144	4,773	197	1,304	880	232	172
Total (1,000 s. tons)	1,659	2,863	2,247	1,920	2,042	13	50	25	14	10

Commodity	Grain processing or use						
	1967		1967/68				
	January	February	October	November	December	January	February
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.
Corn							
Wet-processing	16,184	15,138	19,166	17,058	15,949	18,196	17,906
Distilled spirits and alcohol	2,784	2,775	3,320	3,206	2,636	2,574	**
Sorghum grain							
Distilled spirits and alcohol	352	332	307	279	295	307	**
Barley							
Malt liquors	6,912	6,741	7,458	6,938	7,011	7,537	**
Distilled spirits and alcohol	710	603	673	660	608	656	**

1/ Data compiled from reports of the Bureau of the Census, Consumer and Marketing Service, Fish and Wildlife Service of the Department of the Interior, and Dun and Bradstreet, New York. 2/ At processors' plants. 3/ Not reported. * Production and stocks revised for May-through December 1967; revisions for May-September are carried in table 22. ** Not yet available.

Table 24.--Corn: Quantity processed and shipments of specified products by the wet-process industry, United States, 1960-67

Calendar year	Wet-process grindings	Shipments of Products					
		Corn starch	Corn sugar	Corn sirup unmixed 1/	Corn oil, crude and refined	Feed	
						Gluten feed and meal	Corn oil meal
	1,000 bu.	1,000 lbs.	1,000 lbs.	1,000 lbs.	1,000 lbs.	1,000 tons	1,000 tons
1960	153,471	2,127,757	870,051	1,989,774	280,531	1,094	26
1961	157,125	2,176,788	870,266	2,114,253	310,131	1,104	23
1962	171,374	2,341,384	927,226	2,358,757	303,174	1,219	27
1963	184,933	2,355,475	1,051,372	2,526,517	320,443	1,267	31
1964	193,863	2,495,056	1,049,015	2,799,109	366,755	1,349	29
1965	204,916	2,636,884	1,051,102	2,846,206	358,476	1,416	26
1966	203,610	2,755,905	1,080,542	2,947,294	351,348	1,456	23
1967 2/	207,181	2,707,497	1,106,631	2,988,443	372,804	1,469	23

1/ Includes corn sirup, unmixed, sold to mixers outside of the wet-process industry and the quantity used by the wet-process industry in its mixed sirups.

2/ Preliminary.

Compiled from reports of Dun and Bradstreet, New York.

The 1968 issues of the Feed Situation are scheduled to be available February 12, April 10, May 24, August 22 and November 25.

Summaries of these issues are scheduled for release after 3:00 p.m. by the Press Service, Office of Information, USDA on February 5, April 3, May 17, August 15 and November 18.

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